THE OIL WEEKLY

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The Oil Man's Calendar

SEPT.	
28–30	**American Gas Association, San Francisco.**
OCT.	
1– 3	**Interstate Oil Compact Commission, Palmer House, Chicago.**
2	**AIME Regional Meeting, St. Louis.**
5– 6	**American Gas Association, La Salle Hotel, Chicago.**
8–10	**Texas Mid-Continent Oil and Gas Association, Dallas, Texas.**
12–14	**American Society of Mechanical Engineers, Rochester, New York.**
14–16	**AIME, Petroleum Division, Los Angeles.**
19	**National Stripper Well Association, Wichita, Kansas.**
19–21	**Independent Petroleum Association, Wichita, Kansas.**
27–29	**National Safety Congress and Exposition, Chicago.**
29–31	**AIME Petroleum Division, Austin, Texas.**
30–31	**Illinois Mineral Industries Conference, Urbana.**
NOV.	
6	**California Natural Gasoline Association, Los Angeles.**
9–13	**American Petroleum Institute, Palmer House, Chicago.**
16–18	**American Institute of Chemical Engineers, Netherlands Plaza Hotel, Cincinnati.**
17–21	**National Chemical Exposition, and Industrial Conference, American Chemical Society, Chicago.**
DEC.	
2	**New Mexico Oil and Gas Association, Artesia Hotel, Artesia.**

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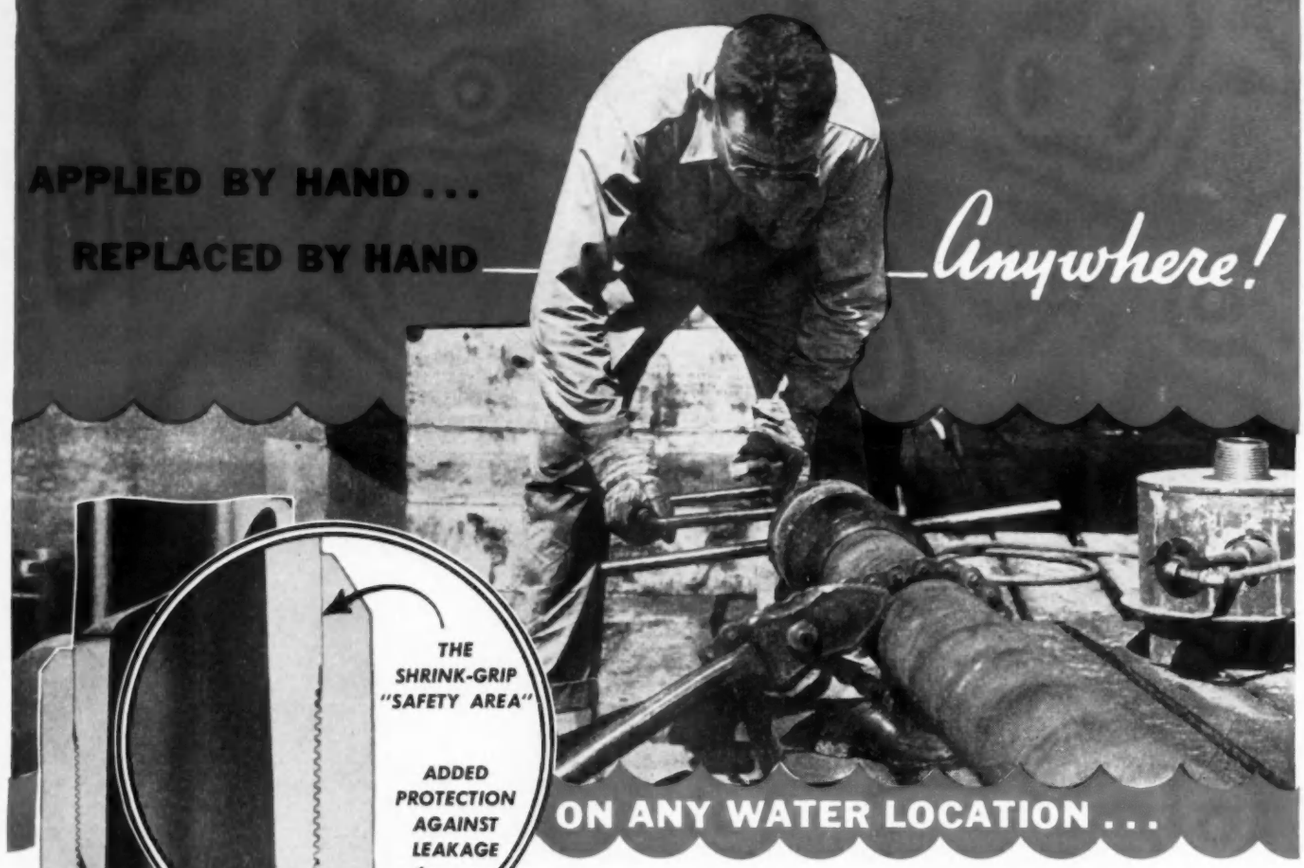

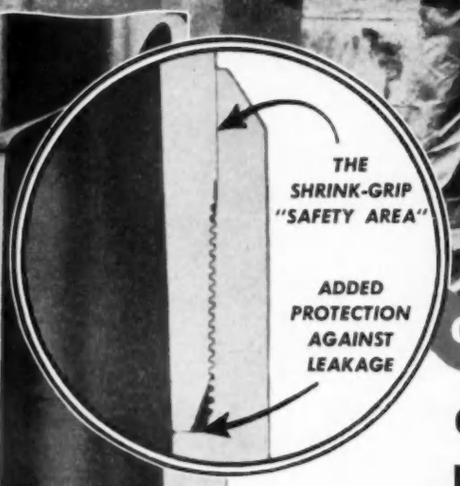

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The Changing Panorama

Pooling to Make Oil One Big Corporation

IN DIRECT contrast to the prewar era, in which the almost constant hurling of monopolistic accusations created an extreme distaste for any collective operations, war emergencies are forcing the oil industry to pool its facilities to such an extent that it moves steadily and even swiftly toward the appearance of one vast organization in which competition will be restricted for the duration.

Although pooling has been practiced to some extent for months, the process will be carried further than heretofore and at an accelerated rate. The need for more efficient production, transportation, manufacturing and distribution, under conditions that require more be done with less, is the force behind the compression that is to eliminate duplicaton of facilities, work and manpower.

Already great strides have been made in the pipe-line field. Competitive companies have joined hands in construction and use of facilities that will get more oil to the East Coast from the Mid-Continent. It has progressed so far that there are a number of instances in which well connections have been turned to competitive companies, so pipe-line systems could be taken up and relaid in more strategic locations. Much additional activity of this nature is due to occur.

Soon similar conditions will be practiced among refiners. Plants will be converted to production of products that their equipment dictates they are best suited to manufacure. There will be exchange of equipment to achieve additional efficiency. The plants will become more closely cooperative ventures through exchange of crudes and by-products, so the utmost in efficiency can be obtained with existing installations.

Far-reaching and immediate advances in pooling are to take place in the marketing division, especially in the East Coast. In effect, the great network of distribution facilities in this area will become one great cooperative venture. To improve railroad movements, all gasoline, kerosine, distillate and residual fuel oils are to be laid down at selected central depots only. Companies will procure their supplies from designated sources for each of the six zones into which the East has been divided by OPC, shipment being made from depots to filling stations and industrial plants by trucks only. This means virtual elimination of brand names and company specifications.

Recent limitations on use of railroad cars and trucks, plus nationwide gasoline rationing, will cause the pooling of marketing facilities to be accelerated sharply as well as spreading the practice to other regions of the country.

While the compressing of the industry into one big cooperative group is especially noticeable in the marketing, transportation and refining branches, it will extend to some degree into the production branch when the selection of particular grades of crudes becomes more necessary, and when lack of equipment forces pooling of available machinery and also may result in the closing of some wells and thus force additional producing burdens upon those wells still capable of yielding the desired quantities.

Texas Production Climbing Rapidly

TEXAS crude oil production has risen to such an extent in recent weeks that the difference between its 1941 rate has been trimmed by well over 50 percent. Whereas an average daily production of 1,145,950 barrels was recorded during the four weeks ended July 25 this year, output rose to 1,293,950 barrels daily during the four weeks ended August 22, and then climbed to 1,338,600 barrels per day during the last four weeks, ended September 19.

This gain of 192,650 barrels in daily production represents a much faster rate of increase than was attained during the corresponding period of 1941. Consequently, the difference in producing rates has been reduced materially. During the four weeks ended July 25, the state's production was 183,450 barrels under the 1941 output, a difference that was slashed to 95,900 barrels during the four weeks ended August 22, and which was cut to only 69,200 barrels during the four weeks ended September 19.

Prospects are that the difference in 1941 and 1942 producing rates will be reduced further. During the next four week period, which will end October 17, the 1942 rate should be 25,000 barrels or more higher than currently, whereas production in 1941 did not increase during the time. The long range production viewpoint also is encouraging, for completion of the big-inch and other pipe-line systems by the end of the year will further enlarge demand considerably.

However, these favorable prospects must not be permitted to result in the state's output being increased too rapidly. The fact that in the three-week period between August 22 and September 12 approximately 2½ million barrels of crude oil went into storage in Texas, serves as a warning.

People Fall for Rationing Rumor

SOUTH Texas last week was the site of a most shocking and disturbing demonstration of the swiftness with which rumors can spread, of the gullibility of the American people and of their still great confusion over the rationing question.

About 3 o'clock on the afternoon of September 23, a rumor was circulated in Houston and vicinity that gasoline rationing would become effective at midnight. The most commonly heard version was that gasoline sales would be prohibited for the next week. The rumor was spread entirely by word of mouth, there being no comment of this nature in either newspapers or over the radios. In fact, the radio stations later were on the air denying they had any information on a gasoline-freezing order.

Nevertheless, from 5 o'clock until far into the night, filling stations were jammed with panic-stricken customers. In some instances cars piled up for blocks around stations. Many needed only a gallon or two to fill their tanks, but waited in line for such small quantities. Others got out of bed and appeared at filling stations in pajamas. Many brought various extra containers and had them filled. Policemen had to be called out in some instances to direct traffic it became so congested. More gasoline was sold in Houston in a five- or six-hour period than ever before.

Few apparently stopped to consider that complete freezing of gasoline sales would wreck industrial work, causing a delay in much war production activity; or that a few additional gallons would be of very small and temporary aid.

The whole thing can best be summed up as a disgustingly shocking illustration that the American people as a whole can easily be thrown into wild panic by Dame Rumor, the Axis' best saboteur.

Second-Hand Line Pipe Drive Likely

WATCH for an intensive new drive for additional second-hand line pipe, so as to complete the OPC pipe-line program, plus a few newer plans.

Heavy inroads upon idle pipe lines have been made already, to build various parts of the $30,000,000 program. Somewhere in the neighborhood of 1000 miles of second-hand pipe either has been taken up and relaid or is definitely tagged for this purpose, and in recent weeks either WPB has given approval for construction or finance details have been worked out for the building of additional carriers involving several hundred miles—if the second-hand pipe can be found. Other plans are still in the mill, but some probably will get quick action if the pipe can be located.

The situation is so acute it is getting much study from the industry's pipeline committees as well as OPC in Washington. The new drive is likely to result in the pulling of every idle pipe line, plus a number of active lines that are not absolutely necessary or where the load could be handled by another system.

In view of the limitations on use of steel containers and the difficulty of procuring them, it may be surprising to many oil men that the steel barrel and pail industries are making twice as many containers this year as in normal years. They are not easily obtainable because approximately 75 percent of the total output is going directly to the armed forces, while the need for the remaining 25 percent can be traced indirectly to the war effort.

Lease Allowables May Help Situation

ALTHOUGH having some drawbacks, the proposal that Texas crude oil allowables be put on a so-called lease basis instead of a per-well basis has sufficient advantages under conditions the industry will face shortly to warrant its adoption. Especially is this true in the case of the East Texas field, although also applicable less frequently in other areas. A few limitations on its application would overcome most objections without materially reducing the benefits, and therefore should be included in any regulations providing for its use.

With the shortage of manpower and equipment due to become much more acute shortly, permission to take the combined allowable of several wells from one well would be of material benefit to operators. It would give the industry an opportunity to produce the same amount of oil, but would require less steel and manpower. In fact it would result in the salvaging of sufficient equipment to conduct operations elsewhere that would be more beneficial.

Unless some action of this sort is taken, the situation in East Texas soon may become critical. Many wells face prospects of being closed in, because of WPB regulations prohibiting installation of pumping equipment on more than 1 well to 10 acres, as well as by the shortage of manpower and equipment.

Should Be Limited

If a provision were included in the regulation granting such permission that would definitely limit the amount of allowable transferable to any one well, much of the possibilities of excessive application of the practice would be eliminated. This might be in the form of acreage, with the regulation providing that allowables from not more than, say, 20 or 40 acres could be assigned to any one well.

Of course, one can visualize situations in which an allowable from a well making 75 percent salt water might be transferred to a better well, which would continue to produce the additional quota long after the original well would be incapable of production. However, instances in which advantages could be taken would be isolated.

And after all, the most important objective of everyone at present should not be whether his neighbor is producing an extra barrel of oil but to concentrate on winning the war. If by transferring allowables to few wells, the oil industry can continue to produce the same volume of oil and use less steel and less labor, it would accomplish something highly desirable for itself and the nation in this critical moment.

Editors Called in on Rationing Program

BUSINESS paper editors were invited by Joel Dean, Office of Price Administration, to meet in Washington last Saturday for a "preview of the fuel oil and national gasoline rationing program." The wording of the invitation indicated that a definite program had been developed by OPA while press releases from Washington indicate that considerable confusion still exists because no government agency has been designated yet to handle such a program on a national basis. We replied to the invitation as follows:

"Re: Your wire September 17th.

"Regret inability to attend hearing September 26.

"Have made serious study of gasoline situation in oil refining states and it is our judgment that rationing in states where supply is plentiful is not only unnecessary but is unwise as well. With rare exceptions car owners are already reducing their mileage and speed to bare necessities.

"Oil refineries would be faced with increased unnecessary difficulties and we could, and likely would be, committed under rationing to the ridiculous policy of destroying at the refinery the product withheld from the people. Scores of people with whom we have talked have the feeling that the proposition of rationing the states where supply is plentiful is the result of 'dog-in-manger' attitude of people in states already rationed and they resent unnecessary sacrifices when they are called upon to face so many which are genuinely necessary.

"Our position with reference to rationing in those states where gasoline is plentiful, however, is based upon economics of the oil refining business, and we sincerely hope that OPA does not make the mistake of ordering this proposed unnecessary rationing.

RAY L. DUDLEY, *Publisher*,
THE OIL WEEKLY."

To insure safe operation under adverse combat conditions, the United States Navy called for a radically new type of marine turbine oil combining powerful rust preventive properties with superior oxidation stability. Through special refining technique and the unique combination of additives this new war need challenge has been met by Shell Oil Company engineers, and the company now has a contract to supply several million gallons.

The Dallas regional office of OPA's tire rationing division has informed the American Association of Oilwell Drilling Contractors that in its opinion members of drilling crews would not be eligible for new tires, but that they could probably establish eligibility for recapped tires.

WASHINGTON ROUNDUP

By B. F. LINZ
Washington Correspondent

Priority System Will Be Set Up on Railroad Tank Cars

Low Crude Prices and Rationing Before O'Mahoney Hearing

Senate Investigators Praise Oil Transportation Efforts

A NEW transportation pinch faced the oil-rationed East this week as the Office of Defense Transportation prepared to put into effect War Production Board orders setting up a priorities system for the use of railroad tank cars.

Designed to provide facilities for the quick movement of the new crop of vegetable oils, chemicals and foodstuffs, the priorities schedule gave first call to the needs of the military services and war agencies; second place to some nearly 400 liquid agricultural products, and third place to oil destined for the deficit areas in the East and in Oregon and Washington. Still lower ratings are given for oil for the rest of the country, from which area, also, first drafts will be made of any cars which may have to be diverted.

Another development of the week was the announcement by Senator O'Mahoney of Wyoming of another series of "round table" discussions similar to those held in western cities some weeks ago. The discussions will open in Washington October 5 and will cover all phases of the problem of increasing the oil production of the public lands and encouraging discovery and development generally.

The new rubber administrator, William Jeffers, engaged in almost continuous conferences with officials of WPB, OPA and other agencies, but said nothing publicly regarding his plans for making effective the Baruch-report recommendations for tire conservation through nation-wide gasoline rationing, etc. Already, it was said, Jeffers is finding that all-out rationing was easier to recommend than to put into effect without disruption of the whole labor-transportation picture.

Best guess in Washington is that Jeffers will try to meet Baruch's suggestion of a 5000-mile-a-year limit by providing that workers who can definitely prove their need will be given enough gasoline to get to their jobs and other car owners will get darn little.

With the handicaps on motor transportation beginning to exert their full effect, OPC estimated that the need for oil in October would be less than this month and ordered output cut by 6900 barrels a day. Because of seasonal and other factors, the quotas of all but one of the producing states—Colorado—were shifted, some up but more down. See page 55.

Tank Car Priorities Likely to Reduce Number in Petroleum Service

NEW moves to secure the utmost efficiency from rail transportation facilities were taken by war agencies during the week, with WPB Director Donald M. Nelson on September 24 ordering the OTD to set up a system of priority regulations for the use of tank cars, following a demand upon the leading companies by Deputy Oil Coordinator Ralph K. Davies to reduce gasoline shipments to the East Coast and increase deliveries of heating oils to New England.

Under the priorities schedule set up by Nelson, top "A" ratings will be issued for tank-car transportation of materials for the military services and specified war agencies; "B" ratings will be assigned to some 390 chemicals, oils, etc., which must be moved in volume, and "C" classification will be given to petroleum and products into the rationed Eastern area and Oregon and Washington.

The volume of oil shipments to be given "C" ratings will be determined by OPC, subject to WPB approval. A major purpose of the priorities system is to provide cars for the movement of the large volume of vegetable oils which are now coming out of the crushing plants. This may mean that some cars will have to be taken from oil transportation, in which event the diversions will be made, so far as practicable, at the expense of gasoline transported into states outside the rationed area.

To this end, "D" ratings are given to shipments of oil and products other than automotive gasoline within the Eastern rationed area or into or within the remainder of the country, with the exception of Oregon and Washington, and "E" standing is given for automobile gasoline within the East Coast area and into or within the remainder of the coutnry, the kind and size of shipments to be determined by OPC with the approval of the WPB.

Davies' order on the New England situation was in the form of a telegram to the nine leading companies September 22, in which he said:

"Sufficient heating oil is not moving into the New England area. It is imperative that tank-car shipments to New England States be immediately increased. As an emergency measure we call upon you to cut your gasoline shipments into District 1 and increase your fuel-oil shipments to New England, also to arrange diversions from other District 1 areas in favor of New England.

"Total petroleum movements into this area must increase at once if a disastrous situation is to be averted."

Meanwhile, OPC officials, with authorization of the WPB, continued the drafting of a directive to put into effect the plan for pooling terminal facilities (THE OIL WEEKLY, September 21), including necessary inter-company purchases, sales, exchanges or loans of products, under a program to eliminate entirely the use of railroad tank cars within the East Coast area. The principles of the plan have been given department of Justice approval, and the necessary orders are expected to be issued within a few days.

Both Davies' telegram to the suppliers and Nelson's order for priorities were seen in some quarters as presaging sharp cuts in the volume of gaso-

line deliveries to the seaboard area, but officials expressed the hope that it would not be necessary to reduce the unit value of ration coupons, now four gallons.

Great emphasis, however, was laid upon the fact that cold weather already is beginning to be felt in some sections of the rationed area, necessitating the use of heating oils. More particularly, however, the relaxation of the ban on deliveries of heating oils September 15 has resulted in the transfer of a large part of the oil in storage from the tanks of distributors to those of consumers and the government now is anxious to refill the former's facilities without delay.

Oil May Lose 2000 Cars

Withdrawal from oil movement of 2000 cars may be necessary to provide transportation for vegetable fats and oils during the next two months, ODT officials said September 25 in discussing Nelson's order.

Approximately 6000 cars are in service transporting such war essentials as cottonseed, linseed and peanut oils, lard, tallow and grease, but it is figured that at least 8000 cars will be needed for the fall peak.

Normally, it was explained, "these cars would be available to meet the seasonal demand. Several thousand of them, however, have been "loaned" for the movement of petroleum and products from the producing fields of the Middle West into the Eastern Seaboard area. Approximately 85 percent of the nation's 143,000 tank cars are transporting petroleum, some 70,000 of them moving oil to the Eastern district."

Further complicating the situation, it was said, are new demands for tank cars to transport molasses to producing centers and move alcohol from those points to smokeless powder works and butadiene to plants producing synthetic rubber. Future requirements for these services, while not completely determined, are expected to be at least 1500 more cars than are now being used.

"Heavy tank car petroleum shipments are threatening to impede the movement of seasonal and highly essential vegetable oils, fats and other products," Nelson explained. "By granting a high priority rating to these products, it will be possible for ODT, at the direction of WPB, to divert tank cars from the carrying of petroleum products and to assure in advance the fair distribution of all commodities vital to the war program which can only be transported by tank car.

"ODT has been directed to make all such diversions, as far as practicable, at the expense of the transportation of automotive gasoline into or within Districts 2, 3, 4 and 5, and to secure the maximum coordination of tank cars with the use of pipe lines, tank ships, barges and tank trucks.

"In order to make most efficient use of all facilities and to compensate for any future tank-car diversions from petroleum hauling, OPC has been authorized by WPB to order petroleum producers, refiners and distributors to make purchases, sales, exchanges or loans of petroleum and petroleum products. OPC is likewise authorized to arrange for the common use of terminals and distribution facilities."

Provisions of Nelson's certification for "priority action No. 1," pertinent to oil are as follows:

(Class C). "Transportation of petroleum and petroleum products into District 1 (as defined by the Office of Petroleum Coordinator for War), including movements from the Plantation and Southeastern pipeline terminals and from Gulf and inland-water terminals within District 1 which are part of through movements into District 1, and into or within the States of Washington and Oregon; of such kinds and in such relative quantities as may be certified to producers, refiners, suppliers or distributors from time to time by the Office of Petroleum Coordinator for War, subject to the review and counter signature of the undersigned.

(Class D). "Transportation of petroleum and petroleum products, other than automotive gasoline, within Districe 1 and into or within Districts 2, 3, 4 and 5 (as defined by the Office of Petroleum Coordinator for War), except the States of Washington and Oregon; of such kinds and in such relative quantities as may be certified to producers, refiners, suppliers or distributors from time to time by the Office of Petroleum Coordinator for War, subject to the review and countersignature of the undersigned.

(Class E). "Transportation of automotive gasoline within District 1 and into or within Districts 2, 3, 4 and 5 (as above) in such relative quantities as may be certified to producers, refiners, suppliers or distributors from time to time by the Office of Petroleum Coordinator for War, subject to the review and countersignature of the undersigned.

"(B). To the extent that diversion of tank cars by ODT is required to give effect to the foregoing priorities, after using available idle cars, such diversion shall, so far as practicable, be at the expense of transportation of automotive gasoline into or within Districts 2, 3, 4 and 5 (as above), as determined by the Office of Petroleum Coordinator for War, subject to the review and countersignature of the undersigned.

"(C) It is understood that the certifications referred to under Classes C, D, and E above shall be such certifications (subject to review and countersignature of the undersigned) as OPC may issue, pursuant to the duties and responsibilities imposed by the letter of the President of May 28, 1941, and upon determination of the sources of supply and distribution of petroleum and petroleum products to consuming points so as to maintain necessary supply and distribution thereof and to avoid undue hardship upon producers, refiners, suppliers, distributors and purchasers; and that, in order to attain these objectives, OPC will direct persons engaged in producing, refining or distributing petroleum or petroleum products to make such purchases, sales, exchanges or loans of petroleum or petroleum products (except as the same may be subject to the rationing authority of the Office of Price Administration or to review by the War Production Board) and to arrange for such common use of terminals or distribution facilities as may be required in order to attain the most efficient utilization of all such facilities, subject, in each case, to any applicable orders or regulations of the War Production Board heretofore or hereafter issued.

"If it becomes necessary from time to time to discontinue or establish certain movements to effectuate the above, the undersigned may in his discretion issue to you further certifications with respect to the transportation of petroleum or petroleum products."

Included in the chemicals, fats and oils and other products given a "B" rating are alkylate, asphaltum, aviation gasoline of octane number 87, 91 and 100, butadiene, butyl in acetate, alcohol, aldehyde, lactate and searate forms, butylenes, codimer, fuel oil for railroad locomotives, helium, isobutane, isobutylene, isopentane, mineral oil, naphtha, naphtha solvent, paraffin wax, propane, styrene, and practically all other chemicals used in or produced by the oil industry.

FUEL RATIONING: Householders in 30 states who use oil for heating are awaiting the receipt of application blanks for ration books for the coming season, and the Office of Price Administration is perfecting its plans for initiating rationing as of October 1.

The curtailment area, in which con-

sumers face a cut of 25 percent from the amount of oil used last year, has been divided into four thermal zones, in each of which the allowable will be different, based on average temperatures of past years, with consumers in Florida getting only a fraction of the oil which will be given those in North Dakota.

The ration applications will be distributed to consumers by the oil dealers who in the past have supplied them with fuel and who will provide the information required as to consumption last year. The consumer himself will be required to set forth the square footage of the living quarters to be heated and to give other information on which the ration boards will attempt to figure how much oil he should have.

If the fuel-oil rationing works out as well as gasoline rationing it is expected there will be little difficulty in making the desired reduction in conservation. Initial reports now coming in to Washington on the results of the first two months of permanent gasoline rationing indicate that consumption in many areas in the East was 50 percent under the corresponding months last year, despite increased populations in war-production centers.

However, full reports have not yet been compiled and it is not known whether the savings actually achieved reached the objective of the rationing program.

Start Conversion Campaign

OPC officials met with representatives of the industry in Chicago September 25 to lay plans to encourage oil consumers in the Mid-Western states which are to be rationed to shift to coal.

Goal of the drive is the saving of 22,500,000 barrels of fuel oils annually, of which industrial users will be asked to contribute 20,000,000 barrels and householders the remainder. About 25,000,000 barrels of heavy residual oils and 2,000,000 barrels of household fuel oils are being saved in District 1, as a result of the campaign there, it was said.

While emphasis will be placed upon voluntary action by consumers in converting their equipment, the Mid-West industry was told that OPC has ways, under the WPB fuel oil limitation order, to take formal action if it becomes necessary to "crack down." That order provides that deliveries of oil may be prohibited to consumers whose equipment can be converted to the use of unrestricted fuel without causing an unreasonable expenditure or working an exceptional hardship.

O'MAHONEY: Nationwide gasoline rationing and the current low prices for crude will be attacked by the Senate Public Lands subcommittee which held hearings in the West last July, at a series of hearings to open in Washington October 5.

At those hearings, Chairman Joseph C. O'Mahoney of Wyoming announced September 21, representatives of the War and Navy departments, OPC, Bureau of Mines, Geological Survey, ODT, WPB, OPA, American Petroleum Institute, Independent Petroleum Association and other organizations will testify regarding the growing need for oil supplies to carry on the war, methods of stimulating exploration, the possibilities of oil from coal and shale, and the need for increased crude oil prices.

Disclosing his plans to the Senate, Chairman O'Mahoney called attention to the large-scale raids which recently have been made upon Germany from England as demonstrating the steadily growing demand for oil products.

"It may be conservatively estimated that no fewer than twelve to fifteen thousand bombers have been involved in carrying out this vast aerial offensive," he said. "When it is remembered that it cost 1,000,000 gallons of aviation gasoline to carry out the single raid on Cologne, a raid which involved not to exceed six hours of flying, it becomes clear that tremendous quantities of gasoline and oil are necessary to carry out an offensive program of this magnitude.

"The picture becomes more amazing when we realize that American Flying Fortresses and other war planes are fighting on every front in the global war. From Australia and the Solomon Islands to China and to Libya, as well as to Germany itself, our planes are carrying death and destruction to the Axis powers. We are talking even now of increasing the number of cargo planes. We are planning aerial war on an unprecedented scale.

"All this means petroleum. It means the production of petroleum. It means production in the United States, because large areas of the other producing sections of the world have fallen into the hands of our enemies."

In short, O'Mahoney told the Senate, it means that "the mistakes in the production of rubber and steel must not be repeated with respect to petroleum."

"Oil men of the United States have already done an excellent job under the direction of Secretary Ickes and the Petroleum Industry War Council," he said. "A better job needs to be done, not only because of the increasing demand, but also because of increasing obstacles to production."

Nationwide gasoline rationing will tend to decrease supplies by cutting off markets for small operators, the Senator charged, and price control based upon the cost of gasoline to the consumer rather than upon stimulated production also is tending to hold down the development of new supplies. These and other barriers must be leveled to bring into production every operator in the country, he asserted.

O'Mahoney released a telegram he had sent to Coordinator Ickes in which he contended that Wyoming has an estimated reserve of 261,000,000 barrels of black oil which could be handled in Wyoming refineries for shipment to markets west of the Mississippi, leaving Texas and Mid-Continent oils for the East, but the present frozen price established when black oils were not needed, operators in most fields get 50 cents a barrel or less for their oil, which is not sufficient to move the product.

He urged that the price be revised and spacing and other regulations be relaxed to encourage production on the public lands. A reply from Deputy Coordinator Davies revealed that OPC also feels that "the light and heavy crude price schedules of 15 months ago are unrealistic under present-day conditions" and will join in recommending prompt action by OPA in revising prices for Wyoming heavy oils.

"An increased supply of crude oil in the Rocky Mountain states might be useful in serving markets to the East unless freight rates are prohibitive," Davies said. "But the fuel-oil situation on the Pacific Coast is of some concern to us and we feel that any additional productive capacity quickly available in the Rocky Mountain district should be used to meet the rapidly increasing demands on the Pacific coast."

An immediate favorable response to O'Mahoney's plans for further hearings on these problems was forthcoming from oil interests, with William R. Boyd, Jr., chairman of PIWC, declaring the industry's readiness to "meet any challenge facing it with all the vigorous energy characteristic of its rugged existence."

"Service of the industry thus far has been limited only by transportation facilities, not by lack of raw materials or finished products," Boyd pointed out.

RUBBER: The Baruch rubber committee report was alternately criticised and approved in a "report to the nation" released September 23 by Elliot E. Simpson of New York, associated with the Norwalk Tire and Rubber Company and

long engaged in fighting the "Big Four" rubber companies.

Simpson took the position that there is no rubber problem except that created by the Administration itself by confining the bulk of all rubber contracts to the "big four," whose men, he charged, fill key positions in the government agencies concerned with rubber.

In a series of suggestions, Simpson called for centralization of oil operations as a means of expediting the rubber program.

"The direction of oil production is strictly within the realm of the petroleum coordinator, but the rubber to be produced from oil must be in charge of the rubber administrator," he said. "He must see that every effort is made to produce as much as possible and as quickly as possible, and then worked into compounds.

"I feel that more consideration should have been given to the allocation features of the program for the addition of great supplies to the synthetic-rubber program. Every consideration should be given at once to second-hand and used equipment, without the attachment of too many priorities. Too many proposals for synthetic rubber production are based on new equipment. The possibilities of second-hand equipment should be given first consideration in war times.

"He [the rubber administrator] should not delay the grain or the oil process for synthetic rubber to see which is more practical. He should consider both for the immediate production of synthetic rubber at top speed. Even though one may be better and one may be cheaper, both serve the purpose."

Simpson's report followed by a few hours a declaration by Frank Howard, president of Standard Oil Development Company, that American ingenuity was being called upon to develop within the space of a few months a synthetic rubber industry which under normal conditions would require a generation.

Establishment of a rubber production adequate for war needs, Howard told a gathering of chemists and civil engineers, will be a job with no parallel in industrial history.

With the basic methods of production laid, he said, the major difficulty now faced is in coordinating three distinct processes after building the plants and getting them running smoothly.

The major element of the Baruch-recommended program is the production of 845,000 tons of Buna S rubber, from which, Howard said, tires good for at least 30,000 miles on hard roads at a speed of 40 miles an hour can be produced. Present calculations are that the rubber can be made for 30 cents a pound, with prospects for a cut to 20 cents under mass production.

Second largest item is the program of 130,000 tons of butyl rubber, less desirable for tires, but producable with less new equipment at a cost now of 20 cents a pound and eventually of half that much.

The other rubbers which are involved in the program will be small in amount and offer less of a problem to the production engineers.

☆

COUPON BANKING: A ration-banking plan to facilitate and safeguard the handling of ration coupons in trade channels after use by the consumer, has been devised for nationwide use by the OPA and will be tested for a six-week period in the Albany-Schenectady-Troy, New York, area next month, OPA announced September 24.

The plan, contemplating use of all the state and national bank and clearing house facilities of the nation, was worked out by OPA with leading bankers. Federal Reserve Board, Comptroller of the Currency, and the Federal Deposit Insurance Corporation.

The plan visualizes that each gasoline merchant, except gasoline retailers, would open a ration banking account at a bank, where he would deposit all ration credits received from consumers or other traders. These credits would then be transferred against the movement of rationed merchandise by the use of non-negotiable transfer voucher drawn by the buyer to the account of the seller, who in turn would deposit it for credit in his own account. The voucher would then be cleared back to the bank on which it was drawn for debit to the maker's account.

Nation-wide operation of the plan, Administrator Henderson said, will remove from the local war price and rationing boards the tremendous burden of counting and clearing the hundreds of millions of rationing stamps now coming into their hands each month under rationing, and will facilitate the operation of all future rationing program requiring use of coupons. He said it will prove of great value to business men who now frequently have to wait in line at their ration board offices to turn in their coupons.

The ration-banking plan provides for the deposit of ration coupons just as currency is deposited in the bank by business men, with subsequent transactions handled by checks. The consumer's use of the coupons is in no way affected, the control starting, in the case of gasoline, with the wholesaler. Cost of the services rendered by the banks will be borne by the OPA.

☆

TRANSPORTATION PRAISE: The special Senate Committee to investigate gasoline and fuel oil shortages, headed by Senator Francis Maloney of Connecticut, wound up its work September 25 with the filing of a report that "in less than a year the great bulk of petroleum transportation to the Atlantic Coast has been shifted from tank ships to railroad tank cars."

"In view of the excellent progress and cooperation achieved by all interests concerned with the railway transportation of petroleum in recent months," the Senate was told, "the committee deems it advisable to conclude the study and investigation on tank car equipment and traffic with the filing of this report."

The committee was created in the summer of 1941 to investigate the authenticity of warnings by Coordinator Ickes that the East faced a severe oil shortage. Its conclusions, on the basis of hearings, that the shortage was merely one of surplus was largely influential in killing the plan for the "big inch" pipe line from Texas to New York for many months.

In November, however, more ominous portents of shortage began to appear, and the committee reopened its inquiry devoting itself to a consideration of the possibilities of transportation methods alternative to tanker, and since then has sent out and compiled the returns on questionnaires and made suggestions to war agencies, many of which, it said, have been adopted.

Maloney told the Senate in his report that the number of tank cars in East Coast service is expected to reach 75,000 which could deliver 915,000 barrels daily.

"If the number of cars should be increased from 75,000 to 80,000 for this service and adequate locomotive power is available," he commented, "the oil companies, according to an official of the Association of American Railroads, might be able to deliver 1,000,000 barrels of oil daily by rail.

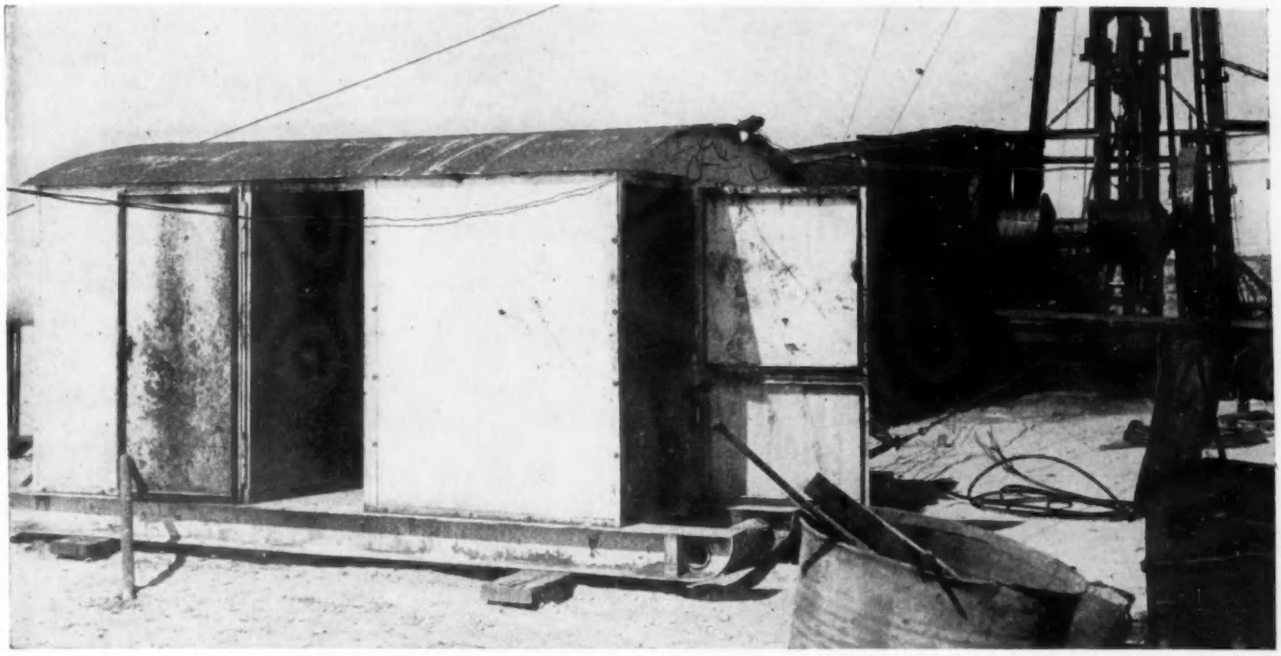
The same official stated that he felt that a continuous delivery of 800,000 barrels daily to the East Coast would be a sound estimate.

However, the report pointed out, cost and price relations have a direct bearing on the use of tank cars, and while some steps have been taken to compensate the companies for the additional expense "the matter of the relatively high cost of railway transportation as com-

[*Continued on page 44*]

Inexpensive Features Refine Cable Tool Rig

By GILBERT M. WILSON, Staff Writer



The all-steel unitized motor house may be quickly set up and connected as a self-contained unit. It contains two 25/50 horsepower electric motors V-belt connected to two pulleys keyed to the band-wheel pulley shaft. Large side panels on the structure may be unbolted and removed to facilitate periodic overhauls.

OF INTEREST to companies using cable tools are the novel and efficient ideas which have been incorporated into the unitized cable tool outfits of a major oil company operating in one of the larger oil fields of West Texas. The majority of these streamlining features are shop-made and relatively inexpensive, and their use has materially aided in lowering of driling and completion costs on a number of 3000-foot wells. Average time for drilling and completing these wells with cable tools has averaged from 40 to 45 days each.

Several factors go together in making it advantageous to use cable tools in this particular field. Of primary concern is the fact that water is scarce in the area, and because of the very porous nature of some of the formations encountered, including the pay zone, the loss in circulation, if rotary drilling were used, would necessitate use of considerable water with a consequent boosting in drilling costs due to the expense of this commodity.

In addition, the oil zone is very porous and has a relatively low formation pressure, making decidedly unwise the use of rotary mud for fear of mudding off the formation. Drilling conditions down to the top of the oil zone are ideally suited to cable tools, since there is no lime body of any consequence encountered. Several bodies of particularly sharp sand logged in this area would be particularly hard on rotary bits, and because the cable tool bits are dressed at the well, the bit replacement cost is held to a minimum.

The cable tool rigs are all electrically powered. One of them uses a conventional derrick, while another is equipped with an A-frame mast, but they are similar in that each employs a unitized, skid-mounted motor house, and the power is supplied to the spudding unit through a conventional belt and band wheel arrangement.

Motor House Is Unitized

The motor house of each unit is a weatherproof, all-steel rectangular, curved-roof structure 10 feet long by 13 feet wide, and having an inside maximum ceiling height of approximately 8 feet. Mounted on a skid base of four heavy I-beams, the motor house is a self-contained unit, and merely by disconnecting the large belt, control wires and power lines, the unit may be picked up and hauled away on a truck. Two 440-volt motors in tandem are employed, each capable of delivering either 25 or 50 horsepower. The two motors are mounted in either end of the build-

ing, with pulleys facing each other and with approximately 18 inches space between the pulley ends.

With eight V-belts to each pulley, the two motors are connected to a two-pulley jackshaft. The bandwheel belt runs over a flat pulley between the two V-belt pulleys, and is keyed to the same shaft. Grids, controller switches and fuse and master-switch boxes are neatly and compactly arranged inside the building. By mounting fuse and master-switch boxes in an inverted position on the ceiling rafters, considerable wall space is saved, and, in addition, it places them within arm's reach of the doorway. Remote-control pulleys, swings, lever arms and conduiting also are neatly mounted on angle-iron supports close to the ceiling. Tension on the steel control cables is readily adjusted by small turnbuckles, the latter being located in a row across the bank of control wires at a convenient place in the ceiling.

A definite advantage is gained—on cable tool rigs in particular—through the use of two motors instead of a single large one. As drilling progresses and the hole becomes deeper, the "rhythm" or frequency of the walking beam strokes must be continually adjusted to an optimum speed; a speed at which the greatest rate of penetration for a given number of strokes per minute. Often the desired speed will lie midway between two points on the controller if but a single motor is used. With the dual power source, however, the controller of one motor may be set on the closest point, and the other controller set on the next higher or lower point, depending upon which direction is desired. This splitting of points tends to average the speed, thus enabling the driller to have more complete control of the spudding frequency.

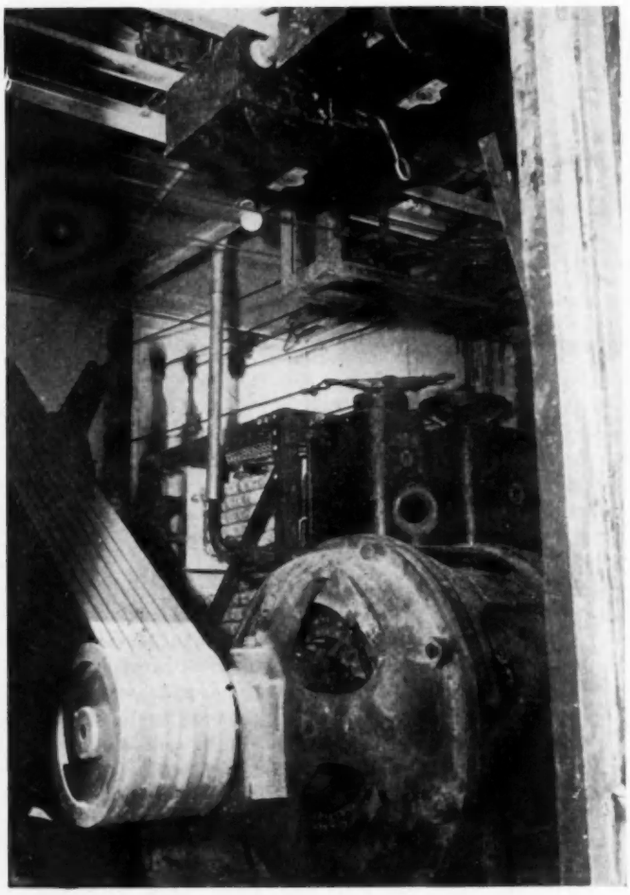
During normal use in favorable weather while the unit is set up at the well, the two doors, one on the side and the other at the end of the motor house, are propped open, providing access to the inside as well as creating good cross-ventilation. Should general overhaul or major repairs be necessary, however, several large panels on the one side and end may be unbolted and removed, making the larger units inside readily accessible.

Outside of the portability and other highly convenient features of this motor house, its weather-proof construction is of great importance in this West Texas area. Sand and dust storms cause considerable damage to bearings and all exposed moving parts, and unless such equipment is tightly enclosed, maintenance costs and down-time will rise sharply. Protection is assured the units in this all-steel enclosure, especially during the intervals when it is standing idle while awaiting moving to the job or the spudding in of a new well.

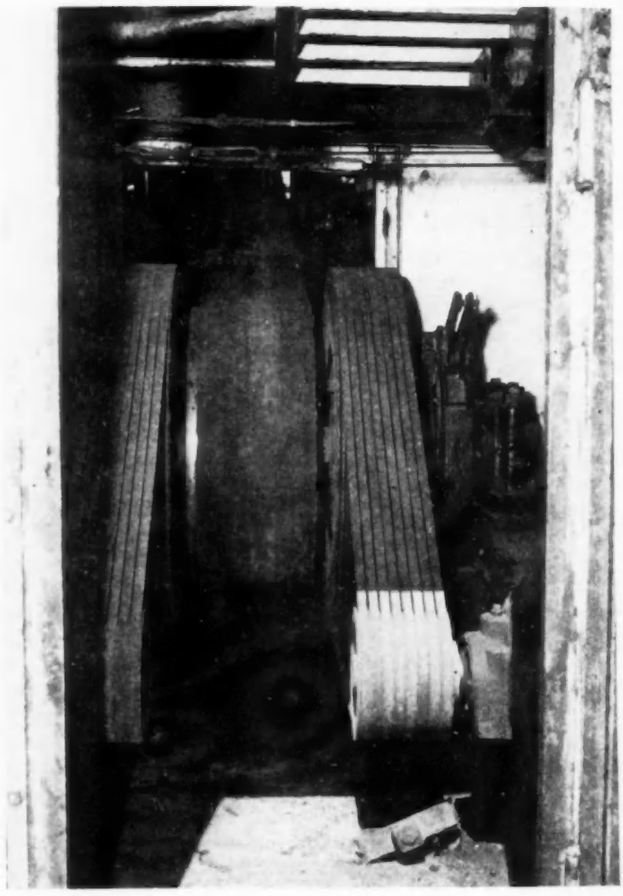
A convenient high-to-low control is mounted on a post on the edge of the derrick floor where it can be easily reached by the driller or another member of the crew. This consists of two pivoted arms mounted on a single shaft or axle, with control wires leading to the motor house fastened to the end of each arm. Each of the two control arms serves one of the motors.

Drilling Line Shock Absorber

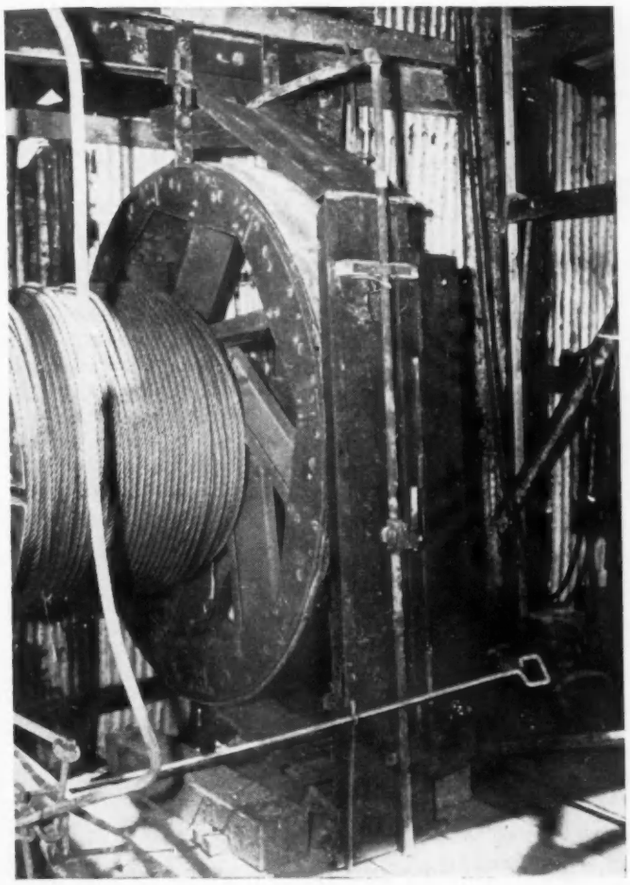
On one of the newer portable mast rigs, the company recently has installed a novel shock absorber device which greatly facilitates the first spudding-in phases of the well drilling. On this rig, the bull wheel is located just to the rear of the crank and pitman. Until the tools become buried, as the well is first



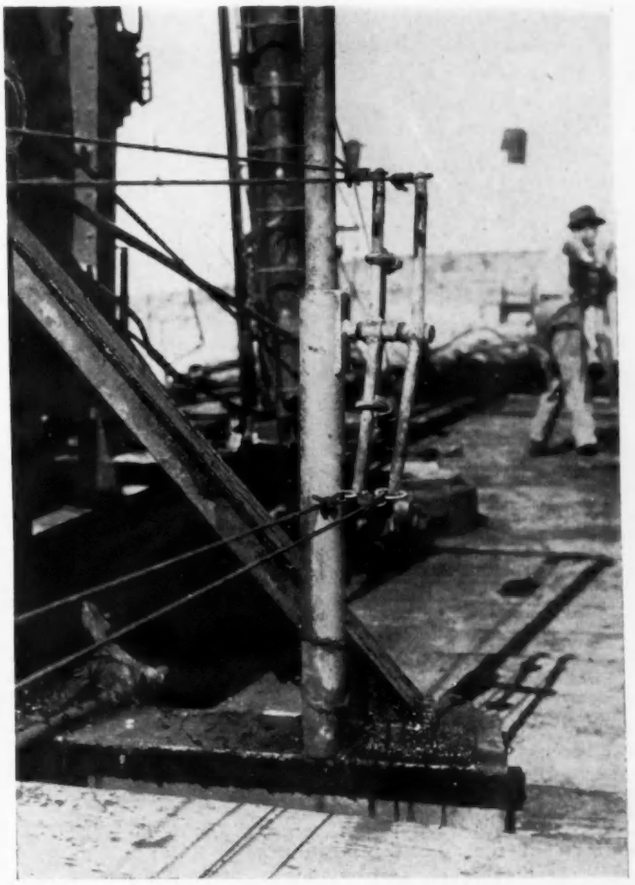
Interior view of one end of motor house showing one of the motors, controller switches and grids. Over-head mounting of master switches utilizes otherwise wasted space. Neatly mounted over-head control wires are kept taut by small turnbuckles.



The two motors are hooked up in tandem to drive the bandwheel pulley in this fashion. The bandwheel belt runs over a flat pulley between the two pulleys that are driven by V-belts from each motor pulley.

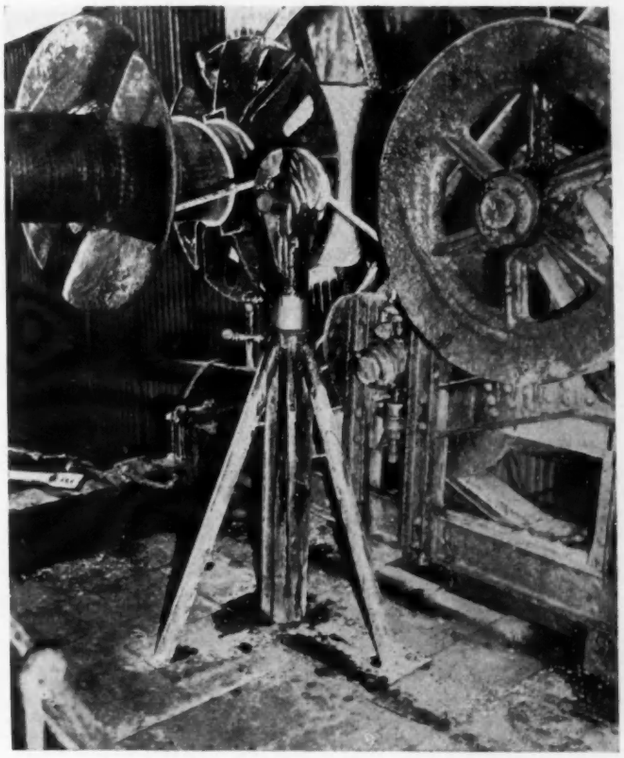


This adjustable bull wheel guard serves dual purpose of confining cooling-water spray to shield the brakeman, and holding brake band in place on braking surface atop the wheel.



The dual high-to-low control arms (one for each motor) are conveniently mounted near the edge of the derrick floor for quick accessibility by either the driller or tool dresser.

Shifting of water line spout to this more accessible location near driller results in time saving and fewer hazards to man on derrick floor. Note friction grip which holds pipe in place on front of headache post.



This shop-made spudding line shock absorber, when set up between reel and spudding sheave, smooths out drilling line motion and eliminates much of the friction and lost motion in the spudding stroke.

spudded in, it is impossible to use the walking beam with the long drill stem, so it is necessary to rig up some other means of getting the hole down far enough to bury the tools, after which the drilling can be continued in the conventional manner using the walking beam.

Instead of employing the usual temporary method of utilizing a spudding pole, this company obtains the spudding action directly from a take-off on the crank. A large sheave having a wide groove is placed on the crank pin, and the drilling line is taken off the reel, run under the sheave, on up over the crown block, then down to the hole. The shock absorber device is placed under the line midway between the reel and this sheave.

The shock absorber is shop-made and consists of a long piston working inside a cylinder, the latter being a 3-foot length of 6-inch pipe. At the bottom of the cylinder is a heavy coil spring, of the type commonly used on the front-wheel assemblies of automobiles, and upon which the piston rests in a vertical position. A small half-moon shaped sheave over which the cable runs is mounted on the top of this piston. The assembly stands approximately 4½ feet high, and in the operating position beneath the line, exerts a strong upward tension against the drilling line at this point during the complete revolution of the sheave turning on the crank pin. The piston is close-fitting in the cylinder and is kept lubricated with a heavy oil for smooth acting motion. Well braced, and mounted on a broad base, the shock absorber is lag-screwed to the derrick floor to prevent its "walking" while in operation.

The spudding sheave, in making each revolution, alternately pulls down and releases the drilling line, producing the desired spudding action of the bit. In addition to the tendency to smooth out the drilling stroke, the shock absorber holds the cable in forceful contact with the spudding sheave to eliminate lost motion and helps to eliminate much friction and wear on the line at that point.

Adjustable Bull-Wheel Brake Guard

On one of the standard-end rigs in which the bull wheel is situated in the conventional location across the floor from the driller, an interesting guard device has been installed on the brake end of the bull wheel. This guard serves the dual purpose of guiding and keeping the brake band properly centered on the top of the brake wheel, as well as preventing water from being splashed on the brake man and out on the derrick floor whenever the brake cooling water is turned on.

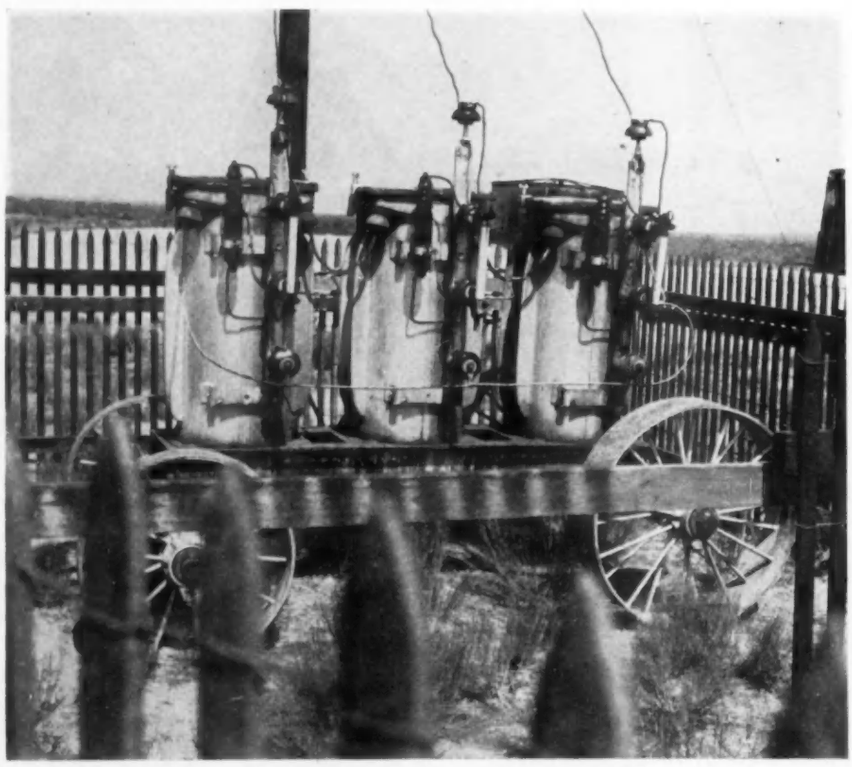
The guard is adjustable to fit any bull wheel installation. The front section extends up to within a foot or two of the total height of the brake wheel, then a shorer section slants across the top to fasten to an adjustable slotted bracket bolted to the overhead derrick girt. The lower ends of these two slotted arms extend down to and slightly beyond the top of the brake band, keeping the latter in its proper position atop the bull wheel.

The guard is made of sheet steel 12 inches wide, strengthened and trimmed on the edges with 2-inch angle iron. The water line, having a conveniently located plug valve, is brought up from below the floor, and is clamped to the upright portion of the guard, then extended horizontally over to the top of the brake band. Hinged to the far side of the upright guard is an 8-inch hinged board shield which can be adjusted so as to more effectively protect the brake man as he handles the brake.

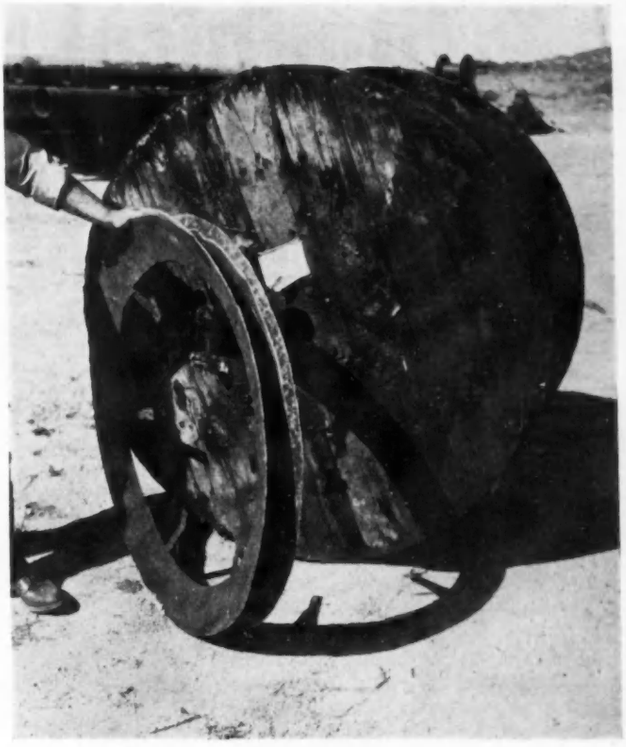
Water Line Shift Is Safety Factor

An important safety feature recently developed by the drilling superintendent consists of a different means of handling the drilling water pouring spout which usually lies on the derrick floor, extending from the side of the derrick over to the hole. Instead of bringing the line across from the driller's left where it would have to lie athwart the direction of travel of the bullrope, it is brought up from below the floor just back of the driller between the bases of the Sampson post and the headache post. Then, by use of several elbows and street-ells, a swing joint was made to allow the pipe extension to be brought up vertically along the front side of the headache post. The 2-inch line is held in place in the upright position, while not in use, by forcibly pressing it into a friction grip clamp fastened to the side of the post near the control or throttle wheel. The spout is just long enough to reach the center of the hole when it is brought down to its horizontal position. Water is turned on at a plug valve located on the floor beside the Sampson post.

There are several advantages to be found in the present arrangement, as compared with the older, more conventional method of supplying drilling water to the hole. With the pipe laid along the floor beneath the bull-rope, the man usually has to jump over the ropes each time the water is turned on or off. In several instances, men have been seriously injured by the accidental starting up of the calf wheel drive just as the man was crossing over the rope. In addition, the pipe laying along the floor constitutes a tripping hazard to other men walking across the floor. The present set-up is far more convenient to either the driller or tool dresser, the valve is more accessible, and the



Power transformers are unitized for easy portability. Picket fence, used for keeping out range cattle, is sectionized for speedy installation at each location. Note small welded clips which hold units to steel base of trailer.



This specially designed shop-made tug rim, lag-screwed to the side of a reel, permits speedy re-spooling of the drilling line by using a bull-rope take-off from the calf-wheel or other power source.

floor is not impeded by the pipe when the latter is not in use.

A number of additional ideas are employed to effect maximum degree of portability of the rigs and drilling equipment. The power transformers, for example, are hauled from well to well on a small steel-wheeled trailer chassis having a narrow steel bed on which the transformers are welded by means of base-angle clips. Spotted beside the power pole a short distance from the motor house, the transformer trailer is always protected from molestation by range cattle by means of a portable, sectionized picket fence. This fence is easily broken down for transportation, and is quickly set up at the new location.

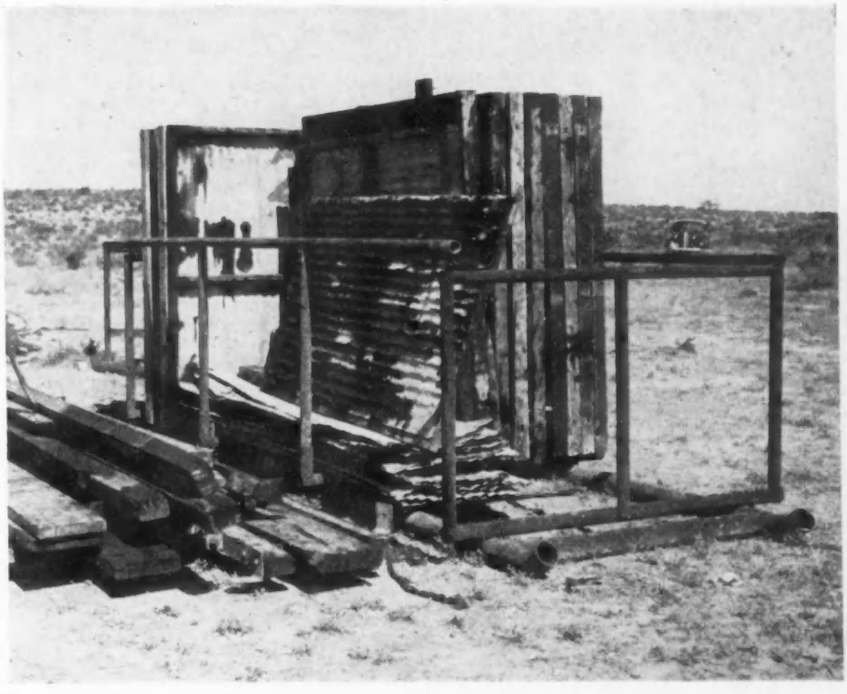
The corrugated iron shelter material, customarily wired or nailed in place in single sheets around the outer edges of the derrick floor, usually represents considerable time in installing them and tearing them down. On these cable tool rigs, however, this material is made up into reinforced 8-foot sections, making short work of such installation procedures. When the well is to be drilled in, these sections usually are removed to prevent their becoming splashed with oil, and at the same time permitting greater freedom of movement about the derrick floor when handling equipment. The siding of the belt hall extending between the rig and the motor house likewise is composed of similar sectionized material. Considerable time is now saved in the setting up and tearing down operations. While not in use or while being moved, these sections are neatly stacked on edge in skid-mounted welded pipe enclosures located conveniently nearby.

Special Tug Rim Speeds Spooling

To speed up and simplify the spooling of drilling line, a special tug rim was designed and made up which may be affixed to the side of any wooded reel, to permit turning the spool with the calf wheel or any convenient power source.

The rim is four feet in diameter and has a V-shaped groove made of two oppositely-dished light wheel flanges that are welded together on their inside diameter. Six short brackets welded to the inner flange at equidistant intervals, permit the tug rim to be lag-screwed to the side of the spool. Provided with an axle and supported on two blocks, the reel can then be set up on the derrick floor and speedily re-spooled with the aid of the bull rope of other line.

An appreciable saving in drilling costs has been realized by this company through the substantial reduction of drilling time and the lowering of maintenance costs. Cable tools, while proving to be of exceptional value in drilling in this area, usually are not widely used on wells of this depth, largely because of the much longer period of time required to drill such holes. The short cuts and refinements on these particular rigs have greatly reduced that difference of time between the use of cable and rotary tools.



Much time is saved in assembling the rig through use of pre-fabricated 8-foot sections of corrugated iron. Used as siding for belt hall and derrick floor, the sections are carried between wells in this special skid-mounted rack.

Graphical Mechanics of Counterbalancing Individual Well Pumping Units

By J. I. LAUDERMILK

GRAPHICAL mechanics is one of the most simple and effective methods available for use by an engineer in the solution of problems which arise in his professional work. Because of its very simplicity the use of graphical mechanics is frequently disregarded and more cumbersome methods used to achieve given results. It is proposed in this article to present a study of counterbalancing individual well pumping units by utilizing graphical mechanics, and to show how simple such work can be.

Preparatory Field Work

The first essential step for the counterbalancing of an individual well pumping unit by use of graphical mechanics is to secure a drawing of the individual-well pumping unit in question. This can be done very simply if the unit is in operation. By merely measuring the existing physical dimensions of the unit the engineer will be able to draw his preliminary sketch. This process will be much simpler if an existing drawing of the unit has been furnished by the manufacturer. For purposes of this article let it be assumed that we are interested in studying the operation of an individual-well pumping unit which is in operation. A drawing of the unit is shown by Figure 1.

The second step in the preparatory field work necessary is to undertake dynamometer well-load studies and obtain the normal card under desired conditions of operation. It is also necessary to determine the type and physical characteristics of the counterbalance in use on the well.

Here we shall assume that it is desirable to check upon the operating characteristics of the given well, assuming a rotary counterbalance of 8000 pounds weight with the center of gravity of the counterbalance being 42 inches from the center of the crank pin and with the desired pumping cycle of 22 54-inch strokes per minute. Also the normal card under present operating conditions has been obtained and is available for analytical purposes.

J. I. LAUDERMILK

Received degrees of Bachelor of Arts and Bachelor of Science in General Engineering from the University of Oklahoma. Was awarded the professional degree of Petroleum Engineer by the university in June, 1941.

Member of numerous professional, scientific and honorary societies, including Phi Beta Kappa and Tau Beta Pi. Is a registered professional engineer in Texas. Is the author of various articles dealing with the petroleum industry.

After graduation he was employed as a petroleum engineer by Gulf Oil Corporation. Subsequently became member of the faculty of the College of Engineering, University of Texas. Is now on active duty as Captain in the United States Army.

Graphical Mechanics—Primary Factors

Having ascertained the physical dimensions of the pumping unit these are now used to make a line drawing of the mechanism. (The line drawing of the unit under consideration is shown in Figure 2.) The significance of this line drawing lies in the fact that graphical mechanics is truly line mechanics, and the analysis will deal with the critical lines of the mechanism and their functional performance. Figure 2 shows the 12 primary factors, or critical elements of the pumping unit, which will enter in the study of the graphical mechanics of counterbalancing. These factors may be enumerated as follows:

1. Crank pin.
2. Crank.
3. Wrist pin.
4. Circle of travel of wrist pin.
5. Circle of travel of center of gravity of counterbalance.
6. Pitman.
7. Stirrup bearing.
8. Arc of travel of stirrup bearing.
9. Saddle bearing.
10. Sampson post.
11. Arc of travel of horsehead.
12. And an arbitrary distance measured from the point of contact of the arc of travel of the horsehead and the straight line motion of the polished rod to an arbitrarily established point on the line of action of the polished rod. (Indicated on Figure 2 by carrying the point A through the linking mechanism from the wrist pin to its corresponding arbitrary point on the line of travel of the polished rod.)

The above listed factors are the principal ones which influence the operation of the pumping unit. All these factors must be carefully drawn to scale as the measurements used in the construction of the line drawing will be used in subsequent work. Errors which are present here will be cumulative throughout the solution of the problem.

Graphical Mechanics of Load Analysis

a. Expansion of Line Drawing.

Having made the line drawing of the unit, this drawing can now be used to analyze the distribution of the variation

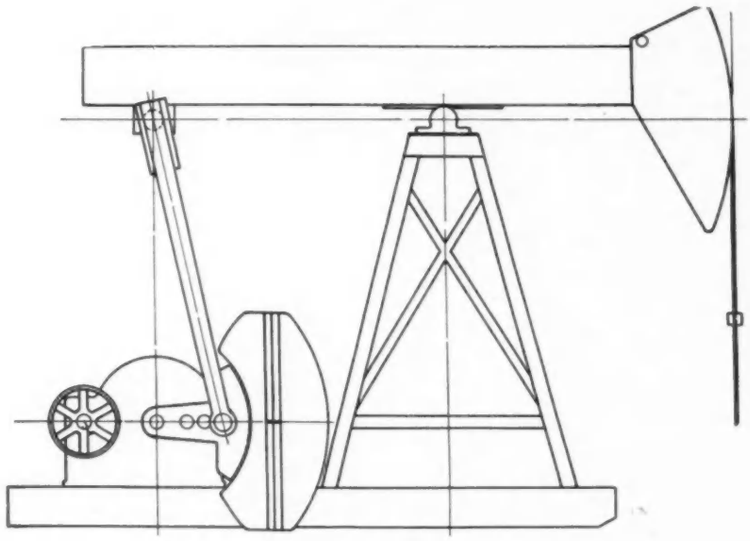


FIGURE 1
Individual-Well Pumping Unit.

of the well load as indicated by the dynamometer card, and also to study the torque produced upon the gear by the well load and by the counterbalance.

Figure 3 presents a very simple and effective means of analyzing well loads and torque by the use of graphical methods. Basically, Figure 3 is the line drawing of the unit (as was first made in Figure 2) which has been expanded to include a method of determining well loads at any given point of operation of the pumping cycle by projection. Also included is the operation of the counterbalance at the same point. The effects of the well load and the counterbalanced load are simultaneous and must be considered as such in the analysis of counterbalancing.

A complete explanation of Figure 3 will clarify the methods presented in this article and should permit their use in actual work with ease and rapidity. The primary thing to remember is that the physical dimensions of the unit must always be considered. In the graphical construction the saddle bearing point is the fulcrum point of the system, and the line representing the walking beam must pivot through this point, just as the walking beam itself pivots on the saddle bearing. To establish the length of polished-rod travel it is necessary to determine the highest position to which an arbitrarily selected point on the line of travel will rise and the lowest point to which it will descend. It is obvious that the lowest point of travel will be reached when the crank and the pitman are in a straight line, i.e. when the stirrup bearing is at its point of maximum height. Similarly, the highest point of travel will be reached when the crank pin and pitman are again in a straight line but with the stirrup bearing at its lowest point of travel. These points are indicated on Figure 3 as points O and O′ respectively. Graphically this can be constructed by placing the divider point at the wrist pin point and with a length equal to the sum of the lengths of the crank and the pitman strike off the point of intersection with the arc of travel of the stirrup point. This intersection point will be the highest point of travel of the stirrup bearing (indicated as O on Figure 3). From this point draw a line representing the walking beam through the saddle bearing point to the intersection of the line and the arc of travel of the horsehead. This intersection point may now be transferred to the corresponding point of the line of travel of the polish rod. Here it may be argued that there is an error introduced by using dividers to transfer the point from the arc of travel of the horsehead since the use of dividers will transfer the chord of the arc and not the arc itself. This error, however, will be very small in all actual cases and probably well within the limits of accuracy of measurement of the well loads by the dynamometer itself. It should be noted that the transfer of the point from the arc of travel of the horsehead to the line of travel of the polished rod must be done by referring to some arbitrarily selected point. Having now established the point from the line of travel of the polished rod an arbitrary distance should be selected to transfer this point down the line of travel to establish the lowest point to be considered on the line of travel of the polished rod. This point will be the bottom of the travel of the polished rod. In a physical sense, this point will be the point at which the upstroke begins, and also where the downstroke ends.

Similarly, the upper point of travel of the polished rod can be determined by the same construction using the original divider-length equal to the difference of the lengths of the crank and the pitman instead of the sum of these lengths.

The two points, representing the highest and lowest point of travel of the polished rod respectively, give a graphical representation of the distance traveled by the polished rod during its motion in going from the beginning of the upstroke to the end of the upstroke or from the beginning of the downstroke to the end of the downstroke.

b. Dynamometer Card.

Here it is well to note that the length of the dynamometer card ordinarily will have no significance in itself, as this can be varied at will by the engineer who weighs the well. In the past it has been customary for the well-weighing engineer to adjust his instrument to secure as large a card as possible under the existing conditions.

It is not necessary that the diagram of the line drawing be made to such scale that the length of the dynamometer card be the same as the graphical representation of the distance traveled by the polished rod. In general, it will be found more satisfactory to make the line drawing to some convenient scale, and by projection to expand or reduce the length of polished rod stroke so that it corresponds to the length as shown by the dynamometer card. The method of projection indicated in Figure 3 is as follows:

Place the dynamometer card so that the path of travel is parallel to the path of travel of the polished rod. From the two end points of the card draw parallel lines and intersect these lines with a perpendicular line. From the resulting points of intersection draw lines through O and O′, thus forming a triangle of projection. The points O and O′ are now part of the projection corresponding to the beginning and end of the length of travel. The projection of any additional point can be done by connecting the apex of the triangle and the given point as determined on the path of travel of the polished rod, and extending the line to the vertical reference line. From this line it can be projected to the well load curve on the dynamometer card. Due care must be taken to ascertain whether the load should be taken from the upstroke or downstroke curve.

Torque Calculations

Torque calculations can be easily and clearly explained by carrying through a

complete set of such calculations and noting the significance of each step involved. For example, let us investigate the torque condition existing on the gears when the crank has moved so as to form a 60° angle with the line O-O′, or in a physical sense, the well cycle is 60° past the beginning of the upstroke. This is indicated by the point A in Figure 3.

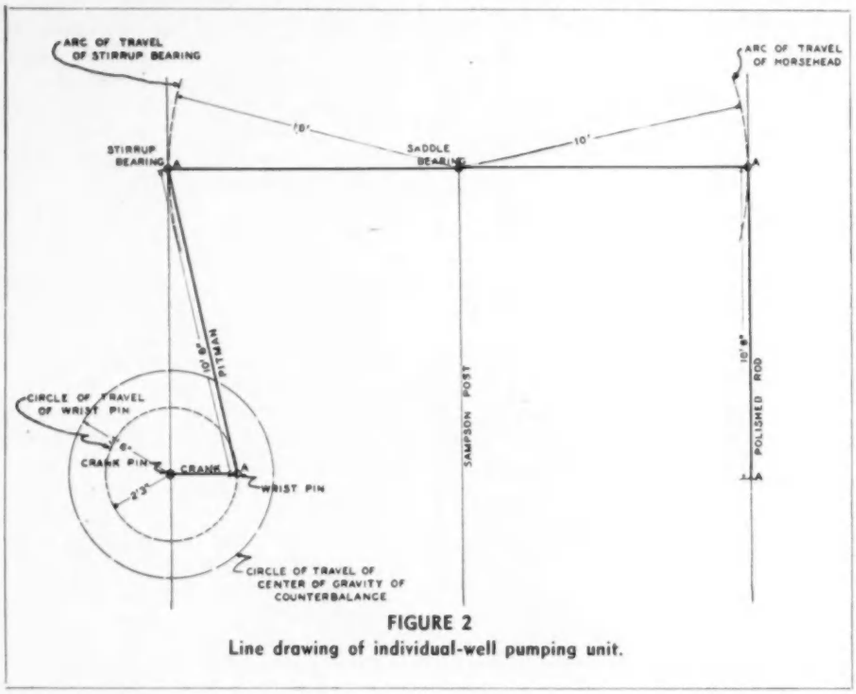


FIGURE 2
Line drawing of individual-well pumping unit.

a. Well Load Torque.

Carry point A from its position on the circle of travel of the wrist pin through the linking mechanism and to its corresponding position on the well-load curve of the dynamometer card. The well load for this position is determined to be 16,000 pounds. This load of the well is transmitted to the gears through the pitman in the actual physical case. Therefore, along the line of the pitman lay off the well load F_w, using some convenient scale. Resolve F_w into its components perpendicular and parallel to the crank (represented in Figure 3 by F_1 and F_2 respectively), and determine the magnitude of each component.

Here it should be noted that the parallel component does not produce torque on the gear, but does cause flexural stresses in the shaft. As this article deals merely with the counter-balancing and not with design of individual-well pumping units, only the torque or rotation producing forces will be considered.

Having determined the magnitude of F_1 (in this case, 15,200 pounds) the torque produced by the well load can now be calculated. The lever arm to be used in this calculation is the length of the crank arm.

b. Counterbalance Load Torque.

In a manner similar to that used in the case of the well load, the torque-producing force due to the counterbalance can be determined. The direction of the force, F_c, of the counterbalance is vertically downward. The line of action of this force will pass through the intersection of the crank line and circle of travel of the center of gravity of the counterbalance. F_c can now be resolved into its components perpendicular and parallel to the crank (represented in Figure 3 as F_3 and F_4 respectively). For reasons previously stated, the flextural force is not considered.

Having determined the magnitude of F_3 (in this case, 7000 pounds) the torque produced by the counterbalance can now be calculated. The lever arm to be used in the calculation is the radius of the circle of travel of the center of gravity of the counterbalance.

c. Mathematical Conventions.

To determine the net effect on the gear, it will be necessary to adopt some mathematical convention of sign or sense

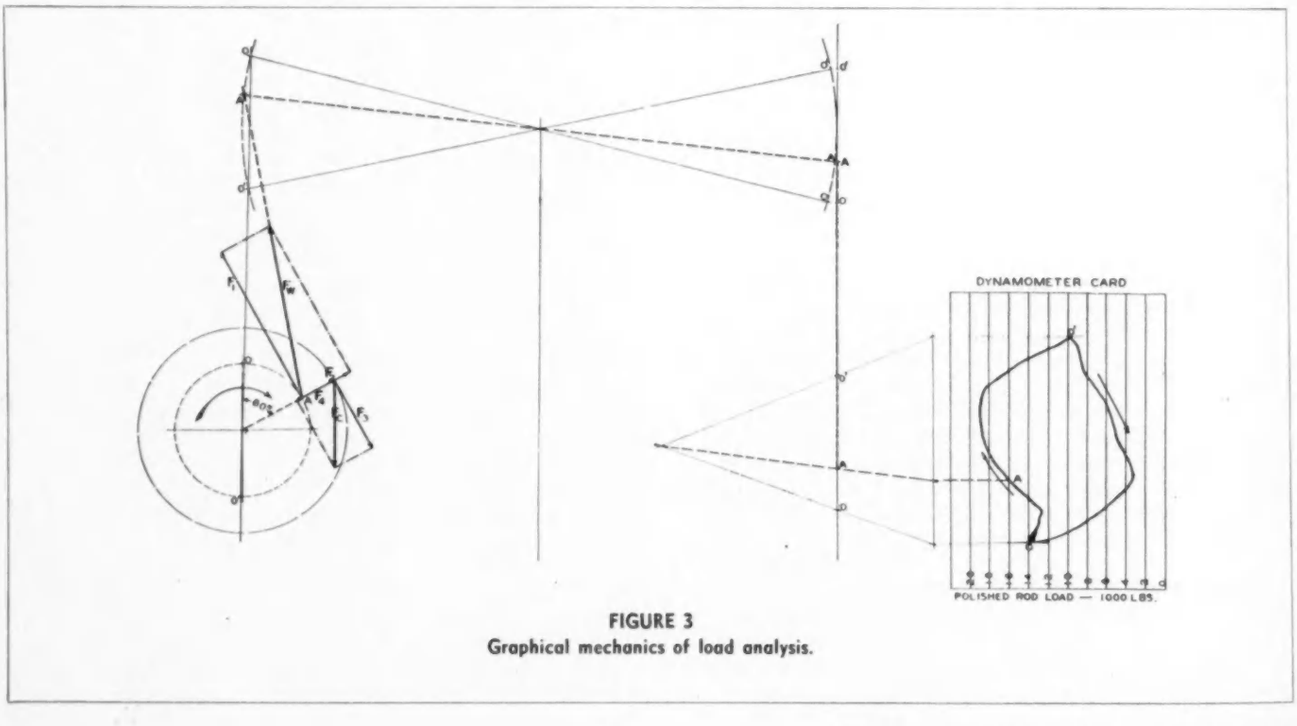


FIGURE 3
Graphical mechanics of load analysis.

TABLE 1

Well Load and Counterbalance Load Data

Crank Position (Degrees)	WELL LOAD DATA			COUNTERBALANCE LOAD DATA		
	Well Load F_w	Tangent Component F_1	Parallel Component F_2	Counterbalance Load F_c	Tangent Component F_3	Parallel Component F_4
0°	14,000	0	14,000 t	— 8,000	— 200	7,900 c
30°	13,000	+ 7,700	10,400 t	— 8,000	— 4,200	6,800 c
60°	16,000	+15,200	5,100 t	— 8,000	— 7,000	3,800 c
90°	18,700	+18,200	4,500 c	— 8,000	— 7,900	200 t
103° 40′ (Maximum Well Load)	19,100	+17,100	8,500 c	— 8,000	— 7,700	2,000 t
120°	17,400	+13,100	11,500 c	— 8,000	— 6,800	4,200 t
150°	12,400	+ 5,000	11,400 c	— 8,000	— 3,900	7,100 t
180°	9,700	0	9,700 c	+ 8,000	+ 200	7,900 t
210°	8,800	— 3,600	8,000 c	+ 8,000	+ 4,200	6,800 t
240°	7,300	— 5,600	4,700 c	+ 8,000	+ 7,000	3,800 t
270°	4,900	— 4,800	900 c	+ 8,000	+ 7,900	200 c
294° 10′ (Minimum Well Load)	3,200	— 3,100	700 t	+ 8,000	+ 7,200	3,300 c
300°	3,900	— 3,700	1,300 t	+ 8,000	+ 6,800	4,200 c
330°	9,100	— 5,300	7,400 t	+ 8,000	+ 3,900	7,100 c
360°	14,000	0	14,000 t	— 8,000	— 200	7,900 c

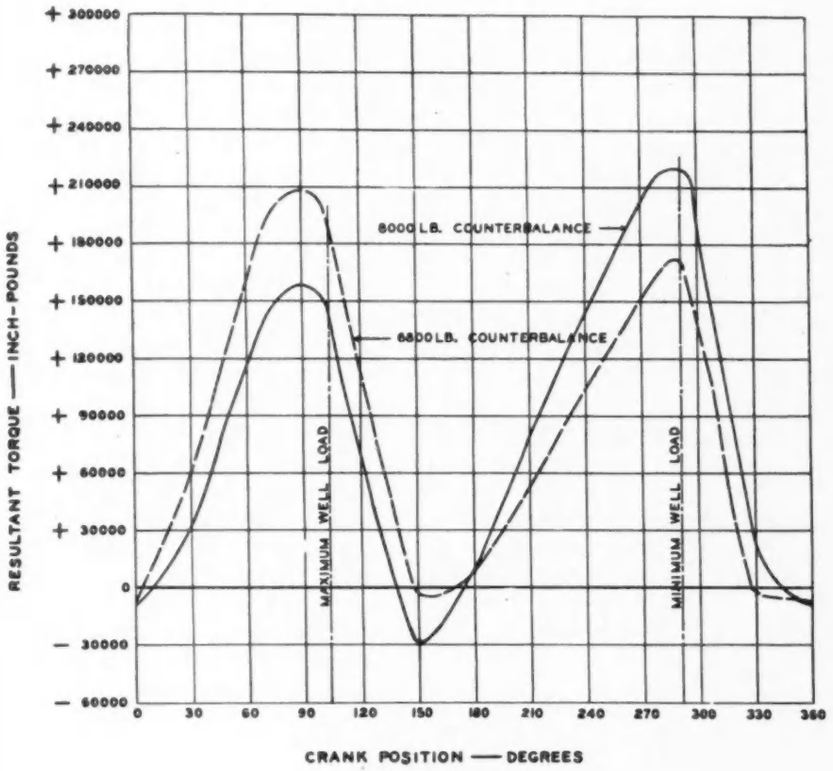


FIGURE 4

Resultant torque curve.

of direction as the resultant torque is the algebraic sum of the well-load and counterbalance torques.

Let it be assumed, arbitrarily, that those forces which oppose rotation shall be considered as positive; thus, establishing, of course, that those aiding rotation shall be considered as negative. At first thought this may appear to be a peculiar convention to adopt, as ordinarily a force aiding an operation is considered positive. However, it is desirable to deal principally with positive forces and for this reason the above convention is chosen. Should the reverse convention be chosen, principally negative forces would be encountered except in the absurd case of assuming the well to run the power equipment.

Having established the stated mathematical convention of signs, the completion of torque calculations can now be done.

Torque Analysis

As a first step to analyzing the torque conditions existing on the gear during the pumping cycle of the well, well-load and counterbalance load data should be computed and tabulated for representative points of the entire cycle. In this article every 30° position of rotation of the crank has been selected for investigation (in most cases this number of individual points will be sufficient to establish a general curve of existing torque conditions). The tabulated results are presented in Table 1. In this table the flexural forces are also tabulated, followed by the notation "t" if tension producing and "c" if producing compression. These forces are therefore readily available should it become necessary to consider excessive bending of the shaft in the analysis.

Using the data of Table 1 and the proper lever arms for the well load and the counterbalance load, Table 2 can now be computed and the resultant torque for each point under consideration determined. These data should now be plotted for further analysis. Plotting may be done on Cartesian coordinate paper as indicated in Figure 4, or preferably by the use of polar coordinates as shown in Figure 5. Both the Cartesian curve and the polar curve can be used to advantage in analyzing the torque conditions. The ideal situation would be to reduce the peak torque and eliminate reversal of stress in one operation, i.e. have constant torque during the entire well cycle. It is obvious that this ideal condition when plotted on Cartesian coordinates would yield a straight line and on polar coordinates a circle.

Consideration of the curves of existing conditions shows that there exists considerable variation in stress as well as a reversal of stress during the cycle of operation. The points of reversal of stress immediately indicate the critical points to be considered. However, it should be remembered that it will be impossible to eliminate reversal of stress in the case of individual-well pumping unit since at certain points, the torque-producing forces become zero in value and momentum and torsional forces in the shaft are relied upon to continue the pumping cycle past these conditions.

Rigidity of the Torque Curve

For purposes of simplification of analysis it may be assumed with a reasonable degree of accuracy that the Resultant Torque Curve is rigid and may be shifted around the graph so as to give the best operating conditions. Acting upon this simplification it will be seen that shifting the curve in Figure 5 to the left will cause this curve to approach more nearly the shape of a circle, thus indicating that in this particular case the well is over counterbalanced. It will also be noted that the points of reversal of stress are approximately opposite each other, thus showing that an attempt to "round the circle" will eliminate reversal of stress at one point but magnify it at the opposite point. This indicates the limits of the amount of

change that can be made to correct existing operating conditions.

Remedial Counterbalance Measures

Reference to the data of existing conditions shows that the maximum reversal of stress occurs at a crank position of 150°, where the magnitude is minus 28,800 inch-pounds. Similarly, it is noted that at the opposite position (crank position of 330°) the resultant torque has a positive value of only 20,700 inch-pounds. These values are, therefore, limiting factors, since alteration of one or the other to secure desirable results may cause the opposite factor to change to such an extent that the net result will be undesirable.

Therefore, it appears reasonable as a first trial to reduce the counterbalance in such manner as to secure optimum benefits by taking a mean value of these two to determine the percentage factor by which the counterbalance factor should be reduced. Reference to the data shows that at the conditions in question the counterbalance torque is 163,800 inch-pounds. The reduction to be applied can be calculated in the following manner:

$$\text{Reduction} = \frac{(28{,}800 + 20{,}700)\ /\ 2}{163{,}800} \times 100$$

$$\text{Reduction} = \frac{24{,}750}{163{,}800} \times 100 = 15\%$$

Since the counterbalance effect is to be reduced by 15 percent this can be done in one of several ways.

(a) The counterbalance can be lightened by 15 percent, or to a weight of 6800, if the center of gravity of the counterbalance remains the same subsequent to such a reduction as it was previously.

(b) The counterbalance can be moved inward towards the crank pin so as to reduce the lever arm by fifteen percent, keeping the weight constant.

(c) A combination of the two methods stated above may be used, changing both the counterbalance weight and the lever arm so as to give a total change in the counterbalance effect of 15 percent.

In this article it will be assumed that the counterbalance weight is reduced by 15 percent with the center of gravity remaining constant.

The change in the resultant torque of the system due to reduction in counterbalance weight now can be calculated. This calculation can be carried through very simply by merely reducing the column of counterbalance torque given in Table 2. Table 3 presents tabulation of this calculation and the determination of the resultant torque at corresponding points of the cycle of operation with the reduced counterbalance.

Plotting the data for the reduced counterbalance on Figure 4 it is seen that the peak torque has been reduced and that the magnitude of the reversal of stress has also been greatly reduced. Similarly, plotting this data on Figure 5 it will be noted that the new resultant torque curve represents a shifting of the original torque curve to the left and a tendency toward "rounding out of the circle."

Since the most desirable curve of resultant torque would be a true circle which would represent constant torque conditions on the gear during the entire pumping cycle further refinement may be possible. However, in the particular case in question, it will be noted that additional alteration of the counterbalance effect will tend to "pull the curve over" and thus increase the maximum peak torque.

In any given case, it is possible to secure almost any desired degree of refinement by merely shifting the Resultant Torque Curve until the desired effects have been secured as nearly as physical limitations of the pumping-unit installation will permit.

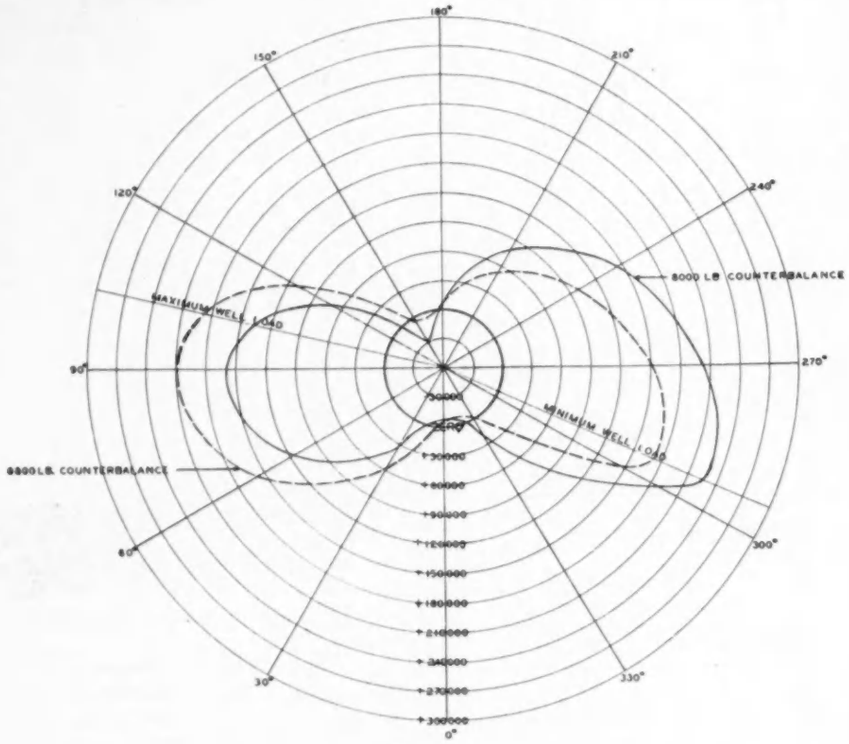


FIGURE 5

Resultant torque curve—polar coordinates.

TABLE 2

Torque Calculations — Existing Operating Conditions

Crank Position (Degrees)	Well Load Torque Inch-Pounds	Counterbalance Torque Inch-Pounds	Resultant Torque Inch-Pounds
0°	0	— 8,400	— 8,400
30°	+ 207,900	— 176,400	+ 31,500
60°	+ 410,400	— 294,000	+ 116,400
90°	+ 491,400	— 331,800	+ 159,600
103° 40′ (Maximum Well Load)	+ 461,700	— 323,400	+ 138,300
120°	+ 353,700	— 285,600	+ 68,100
150°	+ 135,000	— 163,800	— 28,800
180°	0	+ 8,400	+ 8,400
210°	— 97,200	+ 176,400	+ 79,200
240°	— 151,200	+ 294,000	+ 142,800
270°	— 129,600	+ 331,800	+ 202,200
294° 10′ (Minimum Well Load)	— 83,700	+ 302,400	+ 218,700
300°	— 99,900	+ 285,600	+ 185,700
330°	— 143,100	+ 163,800	+ 20,700
360°	0	— 8,400	— 8,400

TABLE 3

Torque Calculations—Improved Counterbalanced Conditions

Crank Position (Degrees)	Well Load Torque Inch-Pounds	Counterbalance Torque Inch-Pounds	Resultant Torque Inch-Pounds
0°	0	— 7,100	— 7,100
30°	+ 207,900	— 149,900	+ 58,000
60°	+ 410,400	— 249,900	+ 160,500
90°	+ 491,400	— 282,000	+ 209,400
103° 40′ (Maximum Well Load)	+ 461,700	— 274,900	+ 186,800
120°	+ 353,700	— 242,800	+ 110,900
150°	+ 135,000	— 139,200	— 4,200
180°	0	+ 7,100	+ 7,100
210°	— 97,200	+ 149,900	+ 52,700
240°	— 151,200	+ 249,900	+ 98,700
270°	— 129,600	+ 282,000	+ 152,400
294° 10′ (Minimum Well Load)	— 83,700	+ 257,000	+ 173,300
300°	— 99,900	+ 242,800	+ 142,900
330°	— 143,100	+ 139,200	— 3,900
360°	0	— 7,100	— 7,100

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1. Great care should be used in putting a new set of tool joints into drilling service as proper running-in for the first few times will give insurance against difficulties later.

2. It is extremely important that the blocks be carefully centered above the well so that tool joints can be engaged in proper alignment.

3. Before running the tool joints in the well, the threads on both box and pin should be thoroughly cleaned with distillate, and any damage to the threads or shoulders from handling should be filed or stoned smooth.

4. Lubrication is extremely important on the tool joint threads and particularly in the initial running. Lubricants with solid additives are recommended for the lubrication of these tool joint threads. Excellent service may be secured by using special types of lubricants. An intermediate grade of lubricant is made of cup grease, tallow, and lead oxide.

5. A very successful tool joint lubricant is compounded from a steam cylinder oil base containing 4 to 6 per cent fatty oil Viscosity 120/150 Seconds Saybolt 210 degrees Fahrenheit, with the addition of curve grease, dry red lead oxide, bentonite clay, and cotton-seed meal. This product is made by several oil companies under the name of "HT-compound."

6. For the first few days of operation, it is advisable to screw the joints to the shoulder by rotating the stand of pipe in the derrick with hand tongs rather than by spinning with the rotary table or with a rope. After the shoulders contact, it is also highly important that they be thoroughly tightened by power, using a catline from the tool joint tong to the cathead on the drawworks. Usually four wraps of the catline around the cathead are required to properly tong 4½″ pipe and six wraps to properly tong 6⅝″ pipe. It is essential that the joints remain tight throughout the drilling operation. To insure this, joints should repeatedly be inspected and any damaged condition immediately corrected, or joint removed from string. Careful supervision and joints properly tightened at all times will insure excellent service.

   Remember, there can be no wear without movement and there can be no movement if tool joints are properly shouldered.

7. Pipe should be checked periodically for straightness. Crooked pipe causes excessive tool joint wear.

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NSCO

Wartime Changes in the Petroleum Economy

By JOHN D. GILL, Director,
The Atlantic Refining Company

Before the Annual Meeting of the National Petroleum Association, September 19, 1942

IT IS appropriate to look over and appraise the wartime changes in the petroleum economy thus far experienced; and to make the endeavor to look forward to the changes yet to come. However, the tentative nature of any report rendered at this time must be obvious. It is much too soon to attempt to recite a history of wartime changes in the economy. Very likely, the changes ahead will overshadow those which have occurred. This fact gives purpose to the hazardous business of prophecy.

At the outset, a distinction should be made between temporary changes and permanent changes. There must be much greater concern over the latter than over the former. If, after the war, there should be a re-establishment of the conditions which existed immediately before the war, there would be a much less practical reason than actually exists for considering wartime changes at all. Gasoline and tire rationing—representing wartime economies at the cost of the fullness of life—and the reduction of gasoline yields and the increase of fuel-oil yields from crude oil processed are representative of changes of a temporary nature. There is every reason to expect that, after the war, economic forces will control these factors as heretofore. On the other hand, permanent changes will continue to present problems long after the smoke of the last battle has disappeared. Changes in the competitive structure of the industry, in the scale of developments of synthetics and in a higher rate of obsolescence of much of the industry's equipment will mean more in the future than they have meant in the recent past.

Of course, our primary concern is unstintedly to supply petroleum products for the successful, expeditious and economical prosecution of the war. This fact endows some of the temporary changes in our established procedures with great importance. It is a fact which seems inadequately understood by some governmental agencies exercising a wartime control over our economy. But even with these temporary changes, a secondary interest forces us to focus attention upon the effects they will have upon our ability to serve the future demands of the public.

Future Ability to Serve

Consideration of our future ability to serve raises no issue involving a diminution of the most vigorous conduct of the war. It is related primarily to the equitable treatment of the petroleum industry among the great industries which cater to military, industrial and civilian needs.

It is fitting to trace this aspect of the matter further. Especially so, because, in the absence of an effective degree of coordination among the governmental agencies which exercise wartime control over us, some of the costly temporary appraisable changes[1] imposed upon us, and from which we seek relief at the hands of the appropriate agency, are dismissed as inconsequential or so surrounded by detailed, novel, sometimes impossible accounting requirements and questionable profit and loss criteria as to discourage the faithful compiler of directives.

Early in the preparation of this discussion, I had planned to keep statistics out of it. But the specific matter here under consideration is so important and can be presented so much more clearly and concisely with the aid of figures that I was persuaded to use a few of them.

The impacts[1] of the war are bearing down heavily upon the operating, administrative and investing personnel of the industry. The first half year profit rate, 5.9 percent on net worth, for a substantial sample of the industry was 15 percent below the 7.0 percent for the 1936-39 base period arbitrarily adopted by OPA. Moreover, due to the impacts of the war, the indications are that during the current year the profit trend has been downward. In the first quarter of the year, the profit rate approximated 6.6 percent, even then below the arbitrary standard set up by OPA. The rate declined to only 5.4 percent in the second quarter, almost as low as in the acknowledged depression year of 1938. There is no fat represented by these figures to feed the industry while it overexerts its financial resources in carrying out costly governmental directives.

These few figures tell a story full of significance. But there is another broader way, requiring more figures in more involved relationships, to tell the same story—a way that should persuade the sharpest critic of our efforts to obtain equitable treatment at the hands of governmental agencies.

Income from Operation

In the 1936-39 arbitrary base period, all elements of the oil industry, collectively, received on the average annually a total income from industry operations of $1,794,000,000, or 2.64 percent of the national income. In the second quarter of 1942, these elements received a dollar income at the annual rate of $2,172,000,000, or 21.2 percent greater than during the base period. The service rendered by the industry, as measured by the barrels of crude oil run to stills, totaled 1,164 million, while in the second quarter of 1942, the barrels processed were at the annual rate of 1,269 million or 9 percent greater. Putting these two sets of figures together, there is derived the fact that, in the base period, $1.54 per barrel of overall income was received by all elements whereas, in the second quarter of this year, $1.71 was received, or 17 percent more. Superficially, it would seem that we were better off in the more recent period. The apparent improvement, however, is attributable directly to an increase in the general level of prices exceeding that of our industry's apparent advantage.

Changes in Entire Economy

But we must not stop our examination of the matter here. What happens to any industry cannot be considered adequately except in relation to changes in the entire economy or to changes in some grand division of the economy. Consequently, there is offered for your consideration similar data for the entire manufacturing industry for comparison with those of the oil industry. In the 1936-39 base period, the manufacturing industry received an average annual income of $15,590 million[2] or 22.9 percent of the national income. It is estimated that, in the second quarter of this year, the manufacturing industry received in-

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Achievement of Oil Industry vs. Manufacturing Companies

	1936-39 Average	1940	1941	1942*
Oil Industry:				
Percent of national income produced	2.64	3.01	2.68	1.97
Crude Runs to Stills:				
Million barrels	1,164	1,294	1,409	1,269
Index	100	111	121	109
Income Produced:				
Million dollars	1,794	2,290	2,537	2,172
Index	100	128	142	121
Income per Barrel Run (Dollars)	1.54	1.77	1.80	1.71
Index	100	115	117	111
Manufacturing Companies:				
Percent of national income produced	22.9	26.4	29.1	30.1
Index of Manufacturing Production:				
1935-39=100	103	124	161	182
1936-39=100	100	120	156	177
Income Produced:				
Million dollars	15,590	20,100	27,600	33,200
Index	100	129	177	213
Income per Unit of Production:				
Millions of dollars	152	162	171	182
Index	100	107	113	120

* Second quarter on annual basis.

come at the annual rate of $33,200 million, or 112.9 percent greater than in the base period.

In the four-year base period, the average service rendered by the whole manufacturing industry, as indicated by the Federal Reserve Board's Index of Manufacturing Production, was 103, whereas in the second quarter of this year its service was at the rate of 182, the difference representing an increase of 76.7 percent. Now, when these two sets of figures are put together to determine the income per unit of production, it is found that for each of the base years, on the average, there were 152 million dollars of income whereas in the second quarter of this year, the income per unit of production reached 182 million dollars or 20 percent greater than in the base period. Clearly, from the premises adopted, it can be concluded that the petroleum industry currently is receiving relatively an appreciably lesser return for its services than the all-manufacturing group. Indeed, if the oil industry were to receive just as much income per unit of service as the great all manufacturing section of the economy, that is, if it were receiving currently 20 percent more than in the base period, it would be receiving an overall income at the annual rate of $2,347 million or $175 million more than it is receiving, equal approximately to 14 cents per barrel. It is no mere coincidence that this figure approximates the combined estimates of the thus far uncompensated costs of compliance with governmental directives.

Industry's Current Income

The table[3] from which these figures are drawn is presented herewith. From it you will observe that our industry's current annual rate of overall income is nearly $400 million less than for 1941 and more than $100 million less than for 1940 and that our income per unit of service rendered is currently less than in either of the two years named. On the other hand, the income of all manufacturing industries has risen by leaps and bounds, a wartime phenomenon clearly understood. However, the income of the manufacturing section of the economy per unit of service rendered has, unlike that of the petroleum industry, risen steadily from an index of 106.5 in 1940 to 112.5 in 1941 and to an estimated 120 in the second quarter of 1942.

What changes have occurred and are occurring? and where? and how? and what have been their effects? It would take more time to answer these questions than can be devoted to them. Moreover, I do not feel competent to discuss them all. They include far-reaching changes in the relations of the government to our industry; changes in our personnel; changes in the volumes of our goods produced and distributed, and especially changes in the manner of the distribution; changes in the variety and quality of our products; changes of a marked nature in the physical equipment we must use, particularly in transportation and refining; changes in our financial structures; and changes in our relations with the public.

There are also other changes. The position of our industry in the general economy, as measured by the ratio of our overall income to the national income, has undergone a notable change. This has been briefly discussed. Some changes involve the varying degrees of essentiality of our products, termed for convenience, the changed pattern of yields. Then there are changes in the competitive structure of the industry; in the tempo of technologic progress; and in our inter-industry competitive ability with which we strive for a share of the consumer's dollar. In any thoroughgoing examination of the subject, the changes might be classified broadly among those of a technologic, an economic and a political nature. They might also be classified by divisions, as those belonging to the transportation and marketing divisions; and, as mentioned previously, into temporary and permanent changes.

Likely Permanent Imprint

Consideration of the mere recital of the kinds of changes which have occurred and are occurring should make it clear why attention should be focused first upon changes that are likely to leave a permanent imprint on the industry and second upon changes of a differential character, that is, changes which affect variably different sections of the country, different branches of the industry and different operators.

The war period is characterized by the number and tempo of economic changes. Some changes have been made which would not have been made at all had it not been for the emergency. Probably, price control is as good as any illustration of the fact. Changed tempo is likewise a war phenomenon. For example, to build in its entirety a modern tanker in less than 40 days is a notable wartime achievement which must have an affect upon the future costs and speed of construction. Curiously, the power which seems to come from the stimulus of war to produce economic values looms large against the economic values destroyed by modern war. This newly acquired power will probably have as great an influence upon the petroleum industry as upon other parts of the economy and the effects will be spread over many of the factors just recited—technology, equipment, personnel, competitive structure, etc.

Another Madison?

The intense individualism which characterized the operations of the industry in the years between the abandonment of the NRA and the current issuance by wartime governmental agencies of orders, recommendations and directives, all calculated to bring about the reduction of competition and the institution of cooperation in its place, is having now a marked effect upon the competitive structure of the industry. This trend instantly raises the question: Are we headed for another Madison? Many informed persons think so. But I think we may dismiss the question summarily, first, because of assurances provided by legislation that cessation of governmentally inspired cooperative efforts at the end of the emergency will leave the cooperators immune from anti-trust action.

To the exponents of economic planning and to sperficial observers, wartime substitution of various forms of cooperative effort for competitive effort is bringing about reductions in the use of manpower, fuel and supplies, in raw material losses and in other elements of the cost of doing business, particularly in transportation, refining and marketing. These are objectives of the administration of a policy borrowed from

OIL WEEKLY EDITION

BAASH ROSS News

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A MONTHLY BULLETIN COVERING NEWS OF EQUIPMENT AND OPERATIONS IN THE PETROLEUM INDUSTRY

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4. Baash-Ross Rotary Releasing Spear
5. Baash-Ross Rotary Releasing Socket
6. Baash-Ross Type 'C' Autolock Safety Joint
7. Baash-Ross Fishing Type Bumper Sub

RECOVERING DRILL PIPE OR TUBING

Pipe stuck but not parted: If pipe or tubing is stuck in hole but intact to the surface, (1st) run the Baash-Ross Internal Pipe Cutter **(3)** to cut off free portion. Then, (2nd) recover balance of pipe by washing over stuck portion, cutting into sections with the Baash-Ross External Pipe Cutter **(2)** and removing sections*. On this type of work, many operators equip their wash-over string with a Baash-Ross Bumper Sub **(7)** and a set of Baash-Ross Kammerdiner Jars **(1)** to safeguard against sticking.

Pipe lost in hole: ***(a) If lost section is free*** in hole, recover with a Baash-Ross Releasing Socket **(5)** having a Baash-Ross Bumper Sub **(7)** installed above it to aid quick release in emergencies*. For maximum safety, many operators also run a Baash-Ross Safety Joint **(6)** between Socket and Bumper Sub.

(b) If lost section is stuck in hole, run above assembly and add a Baash-Ross Kammerdiner Jar **(1)** above the Bumper Sub. The Jar gives the upward blow necessary for freeing the pipe while the Bumper Sub permits a *downward* blow to be struck to help loosen the pipe, and also to aid quick release of the Socket in emergencies.

(c) If neither "a" nor "b" is successful, run wash-over string to free pipe, then cut into sections with Baash-Ross External Cutter **(2)** and remove sections*

*There is *always* the possibility of a fish becoming stuck as it is moved. Therefore, to eliminate the risk of a costly round trip in case the fish cannot be pulled, it is often more economical to include a Baash-Ross Kammerdiner Jar **(1)** on EVERY assembly of fishing tools!

SALVAGING PLAIN OR PERFORATED CASING

When salvaging casing, liners, screens, etc., from a well, first cut casing or liner with the Baash-Ross Internal Cutter **(3)**. Then . . .

(a) If cut-off section is free, remove it with a Baash-Ross Releasing Spear **(4)** with a Baash-Ross Bumper Sub **(7)** above it*. Many operators also run a Baash-Ross Safety Joint **(6)** between Spear and Bumper Sub to insure maximum safety in any emergency.

(b) If cut-off section is stuck, run the above assembly and add a Baash-Ross Kammerdiner Jar **(1)** above the Sub for loosening the pipe.

REMOVING DRILL COLLARS LOST IN HOLE

When the Drill Collar Assembly (Bit, Reamers and Drill Collars) is lost in the hole, first determine whether assembly is stuck or free.

(a) If free, pick up assembly with a Baash-Ross Releasing Socket **(5)** having a Baash-Ross Bumper Sub **(7)** above it*. Operators desiring maximum safety also run a Baash-Ross Safety Joint **(6)** between Bumper Sub and Socket for disconnecting string in an emergency.

(b) If Drill Collar is stuck, use above assembly and add a Baash-Ross Kammerdiner Jar **(1)** above the Bumper Sub for loosening the Collar.

(c) If prolonged jarring does not loosen the Collar, and other measures such as circulating, oil spotting, etc., prove unsuccessful, then *wash-over the Collar* to free it and again run the Socket-Bumper-Sub-Jar assembly.

Baash-Ross Fishing Tool Men are experts on all types of fishing and salvage operations. Get in touch with your nearest Baash-Ross representative for help on *your particular* problem!

British practices. It is called Concentration of Industry. By the same general processes, crosshauling is reduced or eliminated, advertising reduced and the expense of duplicatory operations minimized. The apparently improved overall status of the industry seems to bespeak the benefits of a planned economy. But a hastily reached conclusion to that effect may result in grave error. In the first place, the changes are possible only because of the exigencies of the war; in the second place, the favorable factors are offset by the loss to the public of service of great but undetermined value; and, in the third place, there is only one crop of improvements possible by the procedure of concentration and cooperation. Thereafter, any progress to be achieved must be through the exercise of initiative as in the free-enterprise system which has brought us to our present high state of economic development. This is a very important but involved subject. I regret that it can be only mentioned here.

Altered Transportation Pattern

The competitive structure of the industry is also being changed permanently by other forces originating in and growing through the war period. One of these is the industry's altered transportation pattern. It is a change traceable directly to the loss of tankers by enemy action and by diversion to the armed services. The expansion in the use of existing pipe lines; the large investments in new pipe lines and in barges operating on the nation's waterways and in terminals; the increased use of motor vehicles for bulk hauling; the accelerated use and consequent depreciation of tank cars; the increased use of exchange-of-products procedure; and the reduction of crosshauls previously mentioned, all forecast changes which will be noticeable after the emergency.

One effect of these changes, certain other economic factors remaining constant, will be a relative reduction in the cost of doing business. This, it would seem, is one of the inevitabilities. Inevitableness, respecting the future conditions of economic activity is one of the lessons to be learned in the present period. Something of what is yet to be must be foreseen and accommodations provided accordingly. Otherwise, the war will leave in its wake a trail of economic disablements due mostly, if not solely, to lack of adjustment to the developing new conditions.

Chemical Advancement

One of these new conditions is being created by what is perhaps one of the biggest changes in the affairs of the industry, namely, the enhancement of the chemical character of its refining branch. Already this change has improved the position of the refining branch among the several branches of the industry and it seems destined to effect even greater changes. The interval between the raw material and the quality of finished products must widen, not perhaps in terms of market value but in terms of practical utility. Daily, in the development and use of petroleum products, the economic principle of "more and more from less and less" is being invoked. It is even conceivable that the curve of fuel consumption of surface automotive equipment might rapidly flatten out or even turn downward as a result of the use of above 100-octane fuels in engines 25 percent to 50 percent more efficient than those of the prewar period. Similarly, in the development of superior cetane number fuels for diesel engines and in the development of long-life turbine, automotive and other lubricating oils. No doubt, the total refinery throughput will be influenced greatly by the future demand for so-called heavy residual fuel oils. Here, there is expended the minimum of refining processes. Continued demand tends to keep alive less progressive refineries. Their fate, consequently, is controlled not so much by rapid increase in refinery technology as by the relations between the cost to produce crude oil and the value of competitive fuels. In this field, the need for foresight is a maximum and the ability to exercise it is a minimum.

The competitive structure of the industry is being altered, probably in a permanent way, also by the discontinuance, and in many instances, no doubt, abandonment, of retail outlets for the sale of petroleum automotive products. Currently, it is rumored in Washington that three out of four such outlets must give up their manpower to the needs of wartime industry, a possibility that delights those critics of the industry who have long maintained the existence of a state of overdevelopment in the retail branch of the business.

Slow-Down of Field Development

The slowing down in the rate of development of crude-oil reserves is a wartime change of considerable significance. The reduction in oil-field developments may be attributed wholly to the administration of governmental directives. Its significance grows largely out of the fact that in governmental circles the belief exists that there are crude oil reserves adequate to meet current military, industrial and civilian needs. This fact, founded as it is on the industry's current ability to produce crude oil, proves the idleness of assertions made years ago by militarists, conservationists and advocates of governmental control generally, regarding the necessity for the federal control of crude-oil reserves on the ground of preparation for a great national emergency.

Perhaps the most notable of all wartime changes in the petroleum economy are those collectively arising from the imposition of control over the operation of the industry by governmental agencies. It is remarkable what can be done to an industry when some important elements of its affairs are controlled fairly rigidly by fiat. Perhaps the most important control of all is that exercised over the prices of the industry's raw materials and products. Price control as administered during the present emergency is not merely anti-inflationary, it is probably definitely deflationary. It has a marked relation to the supply of products although it is pretty obvious that the relation between price control and the magnitude of supply is as yet undetermined.

Governmental Control

Governmental control over an industry's development of productive capacity, by withholding from it materials and supplies needed for that development, is also a potent form of control. It not only affects intra-industry competition but also inter-industry competition. The subtleties of this influence cannot be perceived by agency planners. It is difficult, if not impossible, to predetermine even the major efforts of the administration of directives. The governmental agencies which influence our operations will certainly continue for the duration of the war. The question which concerns us now, however, is whether they will have a permanent effect upon our industry and, also, whether they will be continued after the war. The second of these questions can be assigned to the field of politics; the first one may be answered by appraisals of the degrees of usefulness which the functions they have exercised during the war might provide in the postwar period. My opinion is that their outstanding demonstration consists of showing how difficult it is to conduct economic planning in a complex society. Economic planning, to work well in such a society, must be supported by superlative coordination. The achievement of coodination has been the greatest difficulty in the work of governmental agencies having to do with the petroleum industry.

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[1] These have been discussed in the articles in "The OIL WEEKLY," by L. J. Logan, issues of August 3, 10 and 17; and by the present author, in "World Petroleum," July, 1942; and in a report on "The Impact of the War on the Petroleum Industry," filed with the Petroleum Industry War Council.

[2] Income produced used throughout.

[3] Calculations by E. T. Knight and B. A. Stainton according to formula presented to the TNEC in 1938.

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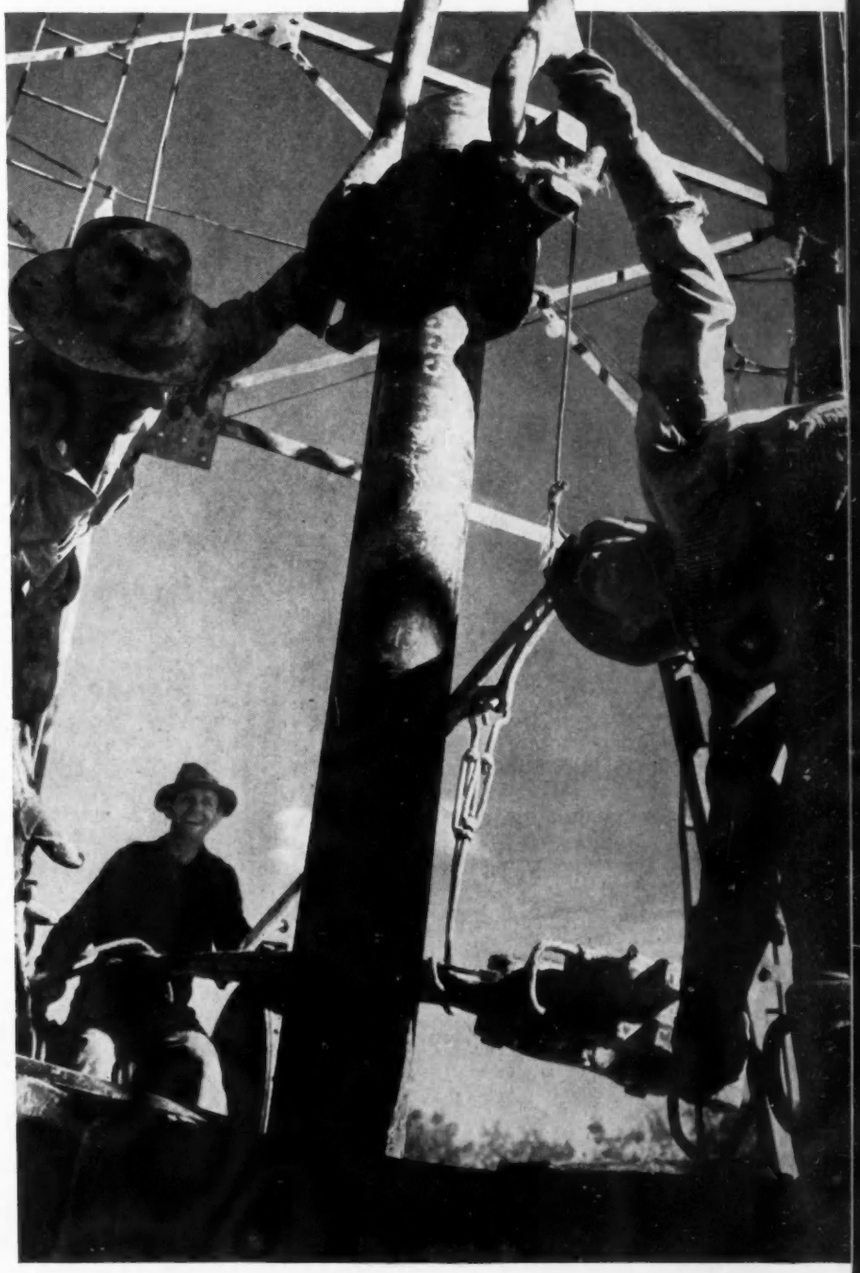

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War Demands Make Saving of Gas Vapors Vital

By JOHN C. ALBRIGHT

THE past year has witnessed an exceptionally large increase in the use and need of light gases, due mostly to the expansion of aviation-gasoline-manufacturing facilities. The next few years are to see an even larger growth in the use of these light ends, as aviation gasoline production is further enlarged and the industry begins manufacture of synthetic rubber. These developments forecast that those fields producing crudes in which larger amounts of these light gases are present will be favored in the selection of natural-gasoline-plant and refinery runs, and in time may even command premium prices. Therefore, good business practice dictates that oil producers start conserving all the light gases produced with their oil. Much can be accomplished through the revamping of field storage and gathering systems to prevent the loss of gas and vapors which frequently occur in the initial sections of gathering and vacuum systems.

Some companies, particularly those with producing leases feeding their own plants, already have taken steps to see that all the gas produced finds its way to the absorbers, even that formed by evaporation of the crude oil under summer weather conditions. They have installed instruments, vapor-tight equipment and kindred devices from the well head, oil and gas separators, flow tanks and subordinate gathering pipe lines. Some have gained these ends without expenditure of substantial investments. The work of one California company is described in this article.

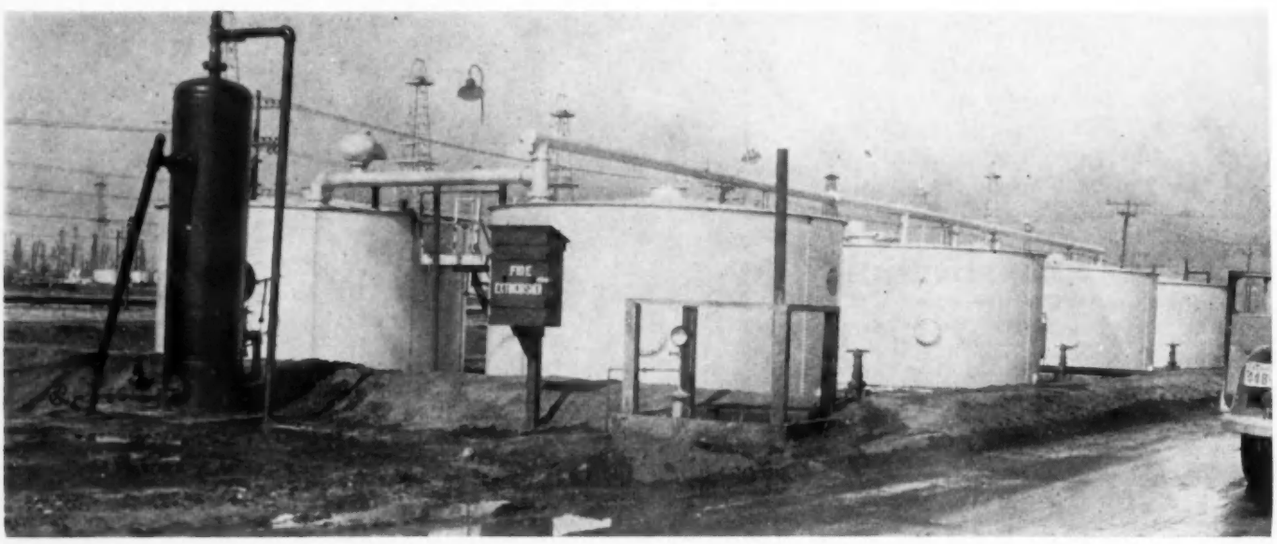
As a rule, it has been found that most old pumping wells can be kept in condition with adequate gaskets and seals between the tubing ring and the casinghead to prevent infiltration of air when the wells are on vacuum, either directly from gasoline plant compressors or applied with individual vacuum pumps operated from the beams or pulled with belts from individual pumping engines.

Because of the attention applied to the gathering systems in fields with little or no formation pressure, gathering lines are usually in good condition. Tests, as frequently as necessary, indicate the source of air, permitting field crews to keep air leaks to a minimum.

Most of the attention therefore is paid to flow tanks and field gauging batteries so that the more stable fractions can be recovered. Fields which flow with formation pressure cause more of the lower-boiling fractions to remain dissolved in the oil, much of which is normally lost after the oil leaves the separators and enters the flow tanks if provisions are not made to recover them at this point.

A large number of the field flow tanks are equipped with ordinary line pipe to carry the vapors released from the oil when it reaches a pressure of approximately that of the atmosphere, but others have light sheet-metal piping which requires less rugged supporting members. In all installations, regardless of the type of piping employed, adequate instrumentation must be installed to control the pressure within a few inches of water as indicated by a manometer, sometimes with a tolerance of half inch either way, vacuum or pressure.

The sheet-metal vapor lines are made by the same method employed for forming ordinary stove pipe. The sheets are rolled to form a cylinder of the required diameter, but instead of being crimped, the longitudinal seams are welded with small rods and a light tip on the torch. Ends of the tubes are square cut and connecting flanges are made of like metal, cut in the



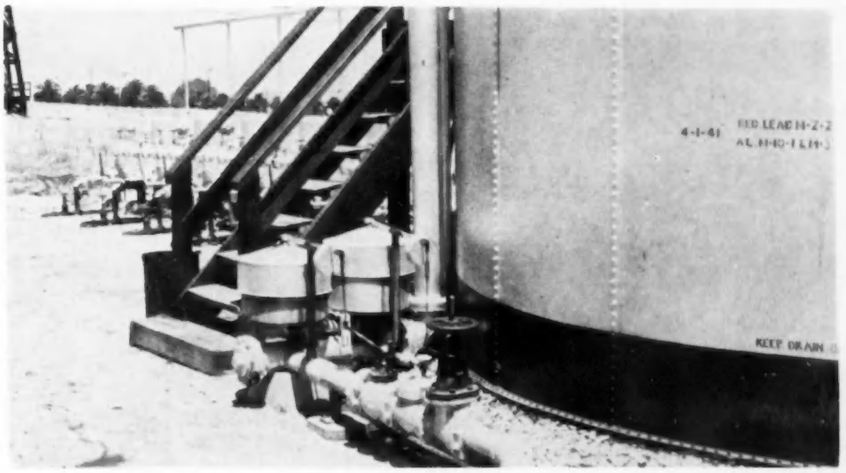
A battery of flow tanks on wells producing by formation pressure, equipped with vapor lines, vacuum-pressure controls and flame arrestors for conservation of light phase gases.

shape of a concentric ring with the inner diameter of a size which will allow a slip fit over the end of the pipe for welding in place. A comparatively large number of holes are punched in the flanges for connecting the joints with common tank bolts. A soft composition gasket is fitted between flanges to form a vapor-tight seal at this point in the connections. The headers connecting across a battery of three or four tanks are approximately 10 inches in diameter while the separate tank connections are about 4 inches in diameter. Tank pipe connections to the main header are made on the lower side of the header using tangential nozzles, or nipples so that condensate and oil will flow readily back into the vapor-tight tank instead of being trapped in the header, which would happen if the tank connections were made at the top or side of the vapor header.

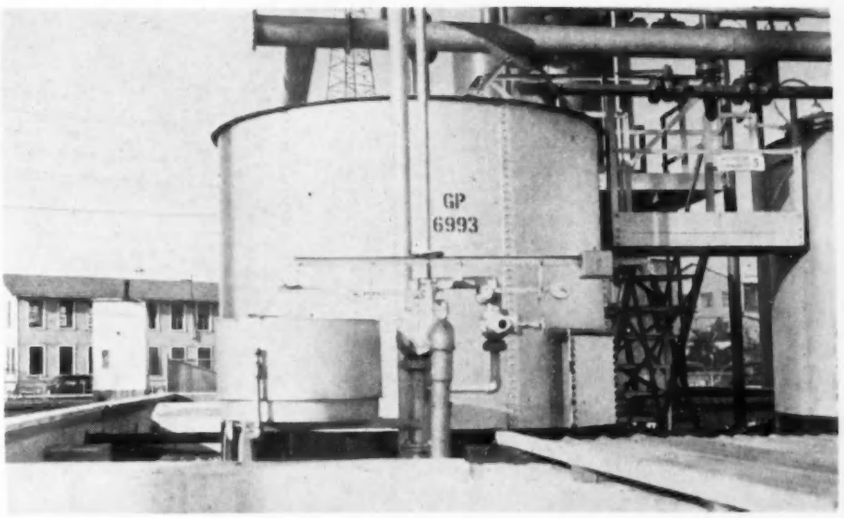
Ends of the large headers, instead of being blanked off with a permanent welded disc are closed with plates which have been punched near the outside to match the flange bolt holes in the pipe connections. If a tank is to be cut out of service for any reason and opened for cleaning or inspection, the tank pipe connection is readily blanked off with a blind plate always attached to its respective flange. Its outside diameter is calculated so that it will drop snugly into the ring of flange bolts where it is supported between two gaskets until the tank is ready for service again. The main header is supported above the tank on a light saddle attached to a two-inch pipe nipple of the desired length, which in turn is fitted at the lower end with a flat plate having two holes punched opposite each other through which the ends of the tanks deck bolts pass.

Sensitive pressure controls are placed on standard piping, which leads the vapors from the sheet metal headers, so that the pressure within the vessels remains at the point determined when setting the diaphragms of the controller arms. The pressure-vacuum multiplying chamber is similar on some of the instruments to the common 'ometer can seen on pumping engines several years ago to control the pressure of the fuel to the gas mixer. All these instruments prevent excessive vacuum and high pressures from forming inside the gauge tanks, while newer units admit pipe-line gas into the tank if vacuum should suddenly form inside. Most tanks are equipped with emergency pressure-vacuum breakers to protect the tanks operating on oil released from separators at flowing wells.

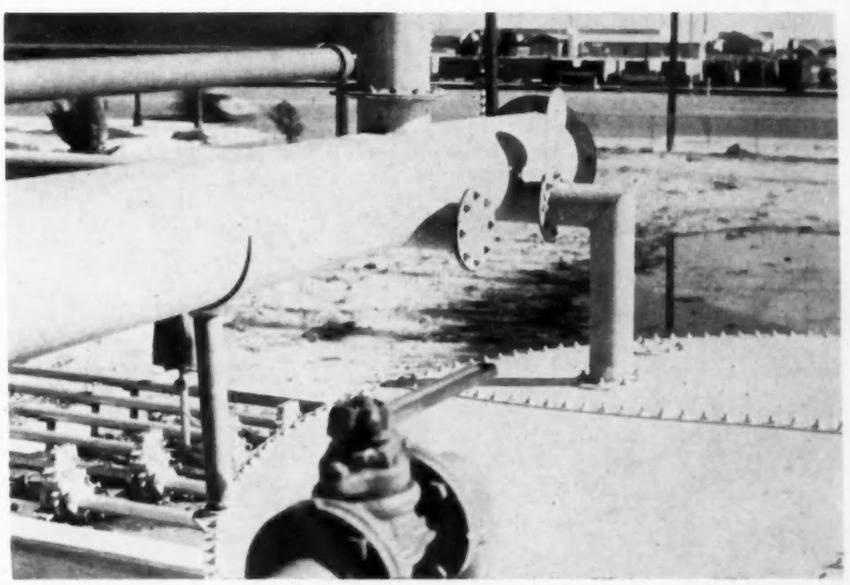
The objective desired with all types of this nature is to lead the rich vapors into the plant gathering system so



A double 'ometer-can type pressure vacuum control on a single flow tank into which oil from a number of pumping wells is delivered.

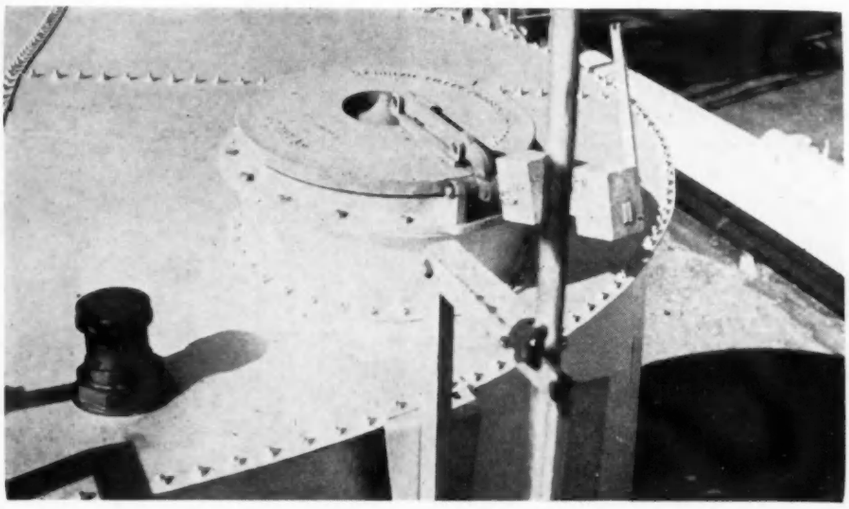


A balanced vacuum-pressure control instrument commonly seen on tank batteries equipped with sheet metal vapor lines.



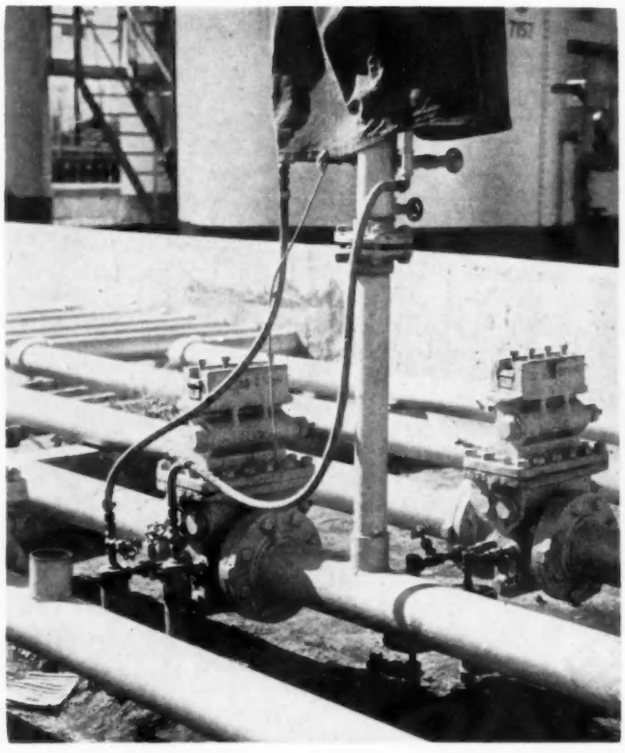
Light weight vapor conducting piping with connections to deck of tank by bolting, extra ell for additional connections, and blanking-off plate for cutting out tank if necessary.

Tank protection for vapor proof vessels in setting designed for total vapor recovery.

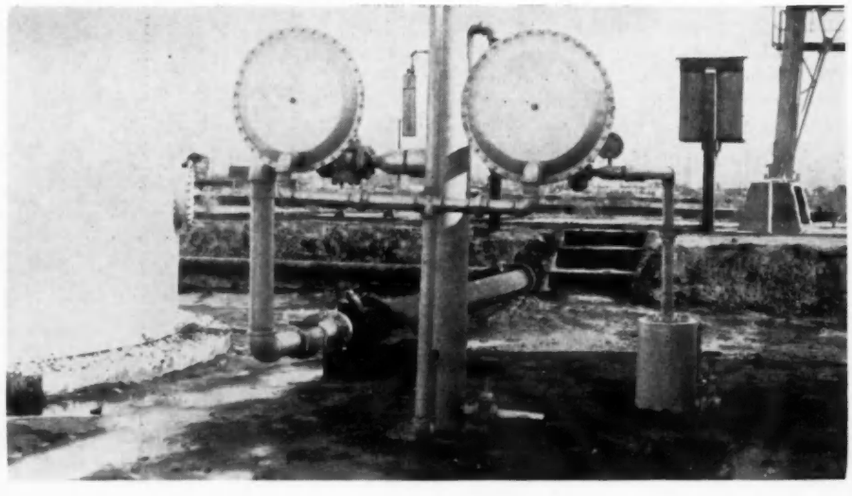


that a greater gallonage may be produced by the plant. The quantity of gas produced from the average flow tank or battery of tanks is not large, but the gasoline content is frequently much higher than the usual separator or casinghead gas. By inspecting closely all fittings on pumping wells from the tubing ring to the main gathering line on the gas system and the vapor system at the flow tanks through the pressure control equipment, the quantity and richness of the material delivered to the plant, which has facilities for processing all the gas produced on the various leases, is increased considerably. To extract and save the critical materials required for synthesis into other materials vital to the prosecution of war and the continuance of industrial activities, there remains only the installation of refrigeration equipment in the plant proper. Fractionation or separation of the various components of the raw gasoline may be done at the individual plant, or the "wild" production may be shipped by pipe line to a central fractionating battery of columns where the split-up is made as desired.

What the income in dollars and cents will be from additional investments to expand the plant by refrigeration is a minor consideration. While the economics of total recovery of propane and higher fractions is an important consideration, the fact that all of these fractions are necessary will lead the oil companies to act as they always have in the past; to produce, manufacture and deliver the necessary material ahead of demand even when hobbled by restrictive rules and regulations.



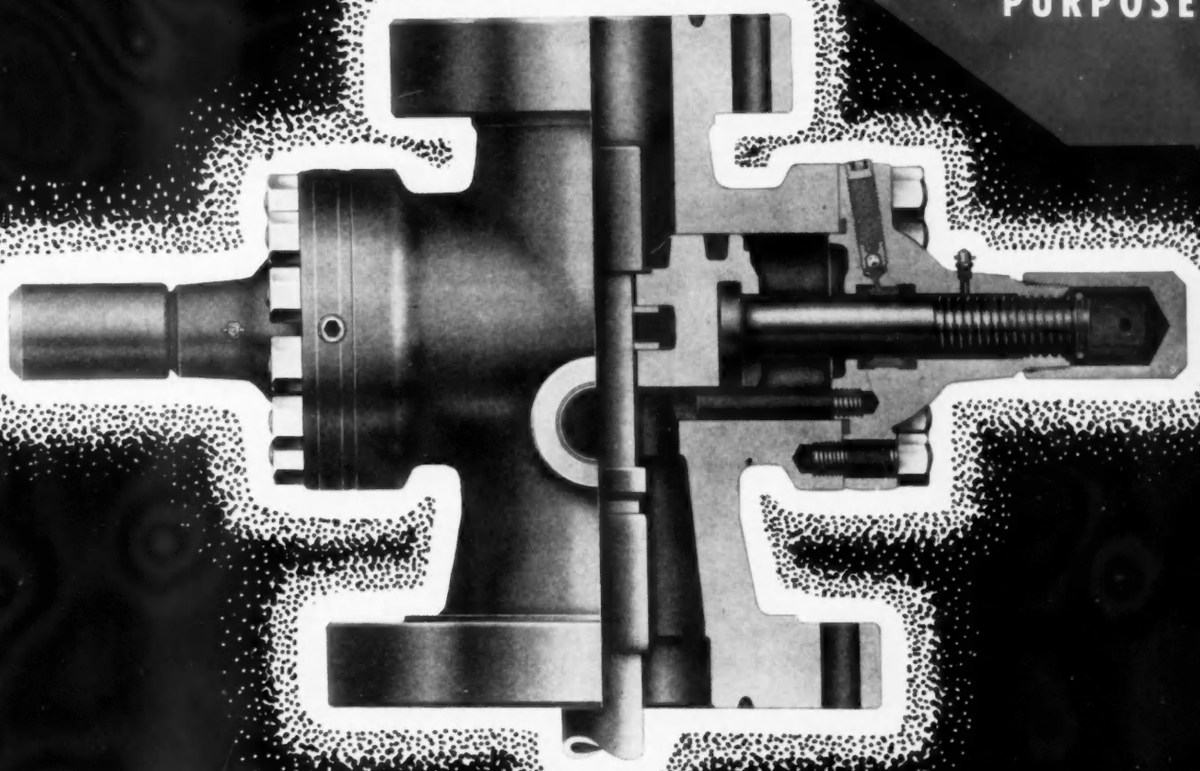
Meter runs with half-collars welded on top side of piping for mounting recorder head, and fittings at meter flanges for quick connection of hose when making occasional measurement tests of gases and vapors.

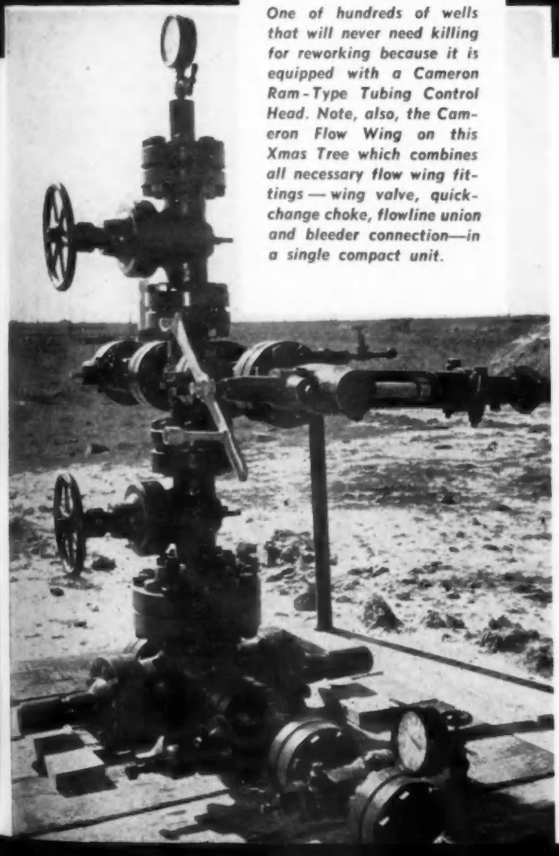


Diaphragm type pressure-vacuum controllers on the vapor line leading from a battery of flow tanks to the gasoline gathering system.

Modern tubing heads do more than simply seal and suspend tubing . . .

CAMERON'S RAM-TYPE TUBING CONTROL HEAD *Serves a* FOUR-FOLD PURPOSE





One of hundreds of wells that will never need killing for reworking because it is equipped with a Cameron Ram-Type Tubing Control Head. Note, also, the Cameron Flow Wing on this Xmas Tree which combines all necessary flow wing fittings — wing valve, quick-change choke, flowline union and bleeder connection—in a single compact unit.

These rugged ram-type tubing control heads employ numerous mechanical features of the famous Cameron Blowout Preventer; yet, with all their exclusive performance characteristics and proven design these heads actually cost little, if any, more than conventional "set screw" type tubing heads.

They provide the ultimate in safe, dependable control during every step of completion operations. The full opening vertical bore freely passes drilling-in tools, liner and screen, and packers. Its rams, provided with patented Cameron Self-feeding Packing Elements, assure positive blowout protection while tubing is being run, well washed, packer collapsed, tubing suspended, etc. In fact, the highest pressure wells may, with absolute safety, be washed completely clean with water or oil before hanging the tubing.

They provide four proven methods of suspending and sealing the tubing string: (1) Ram suspension on a hanger nipple as illustrated above; (2) Slip suspension in the top flange of the head, utilizing the rams as a master gate below the outlets to seal the annular space between tubing and oil string; (3) Boll-weevil suspension from the top flange of the head; (4) Suspension from a threaded hanger flange which bolts down on top of the head.

They are extremely practical on any reworking subsequent to the original completion of the well. When used in conjunction with a second Cameron ram-type control unit, tubing may be raised or lowered, or pulled from the well under pressure without killing and without disassembling the tree.

They obviate the need for a cement retainer when making a squeeze job.

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How to Organize and Carry Out a Scrap Campaign

A SALVAGE program in an oil field, plant, factory, shop or yard, must be based on the fact that industrial salvage and conservation form the backbone of the War Production Board's campaign to put the nation's waste back into production. Unless American industries take on the major job of making broken down, dismantled or unusable materials available for scrap, the national supply of steel for manufacture of war equipment will be endangered. For, if steel mills are not assured of an adequate supply of scrap, they cannot continue to keep up production of the steel which goes into planes, tanks, guns and ships we need to win the war.

Such factors as type of work and the size of plant, partially govern the organization of a company's salvage operations. Oil fields, because of their scattered type of work, may be especially difficult. But common methods of organization of a scrap campaign, collection, segregation and disposal, are available to all, and have proven more efficient than haphazard efforts.

First, the organization to operate an effective salvage collection need not be elaborate or costly. It works best when it is simple and unencumbered with extra officials and unnecessary steps. An able executive of the company should head it up as "salvage manager." He should work with superintendents and foremen in various departments. He must be armed with ample authority to make decisions to scrap unused material.

To start the ball rolling, these men should make a survey of their departments and report to the salvage manager machines and equipment which are obsolete or out of active production. The salvage manager should make a written report of these findings, as a basis for action.

It is management's function to mark and send to the scrap heap equipment that is obsolete. After inspection, use this yardstick in coming to a decision: If a machine or other piece of equipment has not been used for three months, and if it cannot be proved that it will be used in the next three, turn it over where it can be used . . . or scrap it. Either dispose of equipment in industry if there is a call for it, or put it to work as scrap for the weapons of war.

Once such equipment has been marked for scrap, a responsible shop man should supervise its dismantling and classification. The assortment may be made to yield valuable replacement parts for machines in operation, and thus actually pay for the work involved. Cutting down the need for purchasing new parts will remove the plant from the competition for equipment.

No salvage campaign can be successful without the wholehearted cooperation of every person in the operating department. Remember that even the most worthwhile cause needs the proper promotion to put it across. The battle for scrap to keep our production going is dramatic enough to put over with a bang. Stunts, posters, billboards and frequent mention in company publications or house organs are excellent vehicles for capturing and sustaining employes' interest in the program. In most plants, excellent talent can be recruited for this promotion from among employes.

Workers should be urged to contribute suggestions and ideas for increasing salvage output. These may either be cleared through the foreman or written on slips and deposited in a suggestion box. Occasional rewards and incentives for outstanding cooperation in the salvage campaign will bring out employes' initiative. Workers can make or break a program. If their enthusiasm is enlisted and maintained, they will prove collaborators who will match the efforts of management.

Bins and containers—preferably displaying a poster or a slogan—should be placed in strategic spots throughout yards and plants. These serve as depositing places for production scrap, salvaged waste materials and contributions which workers bring from their homes. Separate containers for different metals, rubber, twine, etc., will save time sorting the material.

Scrap is of use to the war effort in direct proportion to the speed with which it is gotten back into production. Arrange regular daily or bi-weekly schedules for the various departments and sources of supply. The salvage manager should see to it that collections are turned in on time to a central collection depot in the plant. Select a definite date each week for shipment to a junk dealer or have the salvage shipped by the company to the nearest collection point.

Remember that scrap bears no label. It is old casing, valves, rotary hose or it is a big draw works that cannot be used. Waste metal, rubber, burlap and other critical materials are valuable even in small amounts. Every pound of these materials can be salvaged by industry for war work.

Treat the lease, station or refinery to a house cleaning. What was junk six months ago has its place in the war effort now. Sort rubbish carefully. Salvage what can be used, and burn or otherwise dispose of the real rubbish that cannot. Keep the premises clear of debris. This is the only method by which it can be made certain that there is nothing further to be salvaged.

Every bit as important as salvaging vital materials is the need to conserve what we have. Use less by making better use of what we have. Get this message across to the workers. It will benefit our sons and relatives in the armed forces. By preventing spoilage and breakage, the material we work with can be turned against the enemy.

In order to coordinate the salvage campaign in the individual plant with the national effort, it is essential that regular reports on the amounts collected, according to classification, be delivered to the Industrial Salvage Committee set up by the War Production Board in your community.

Above all, make clear to all personnel that until the day when we have actually turned out all the war equipment we need to smash the Axis, salvage and conservation are going to remain vital phases of our production. Unless our scrap is turned into weapons **now**, America will be fighting the war with one hand tied behind its back.

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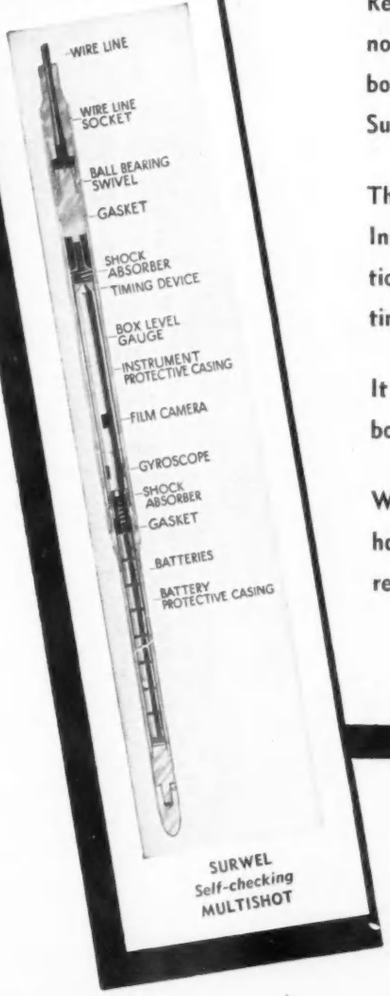

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California Lags Behind Heavy War Demands

TODAY'S situation in California brings almost complete fulfillment of a prophecy in *The Oil Weekly*, published three weeks before the attack on Pearl Harbor.

In the issue of November 17, 1941, page 9, appeared a "Changing Panorama" item containing this prediction:

"Culmination of the protracted conflict between the United States and the junior Axis partner in an outright American-Japanese war logically would intensify naval, military, industrial, and commercial activity throughout the Pacific Coast region and impose upon the oil industry of that region unprecedented demands. Much greater production of crude oil would be required, and many new oil fields would have to be discovered to maintain the large production. More refining capacity would be needed, and more pipe lines.

" . . . The Pacific Coast region traditionally has been an empire within itself in regard to petroleum, and the importance of its maintaining that position would be greater than ever before in the event of war with Japan."

Three weeks after that was written, there was war with Japan. And now, 10 months afterward, the circumstances foreseen for California's oil industry are at hand.

ALTHOUGH JAPAN was an important customer for the Pacific Coast oil industry, there was only a temporary loss of market for California oils when the eastern Axis power went to war against the United States. The former Japanese demand soon was more than compensated by increased requirements for supplying the United States Navy and other armed units of the United Nations participating in the Pacific War.

In fact, the demand for California oil has so expanded that the industry of the region now is confronted with the threat of inability to meet the extraordinary requirements.

Throughout this year, production has fallen short of demand, particularly as regards heavy fuel oil, and it has been necessary to draw steadily on storage to supplement the current output, despite monthly stepping up of production allocations and allowables.

Finally, the recommended production rate has been increased almost to 800,000 barrels daily, and California apparently cannot produce much more than that without damage to the oil fields. That is particularly true considering that an exceptionally large proportion of the needed oil is of the heavier grades, available supplies of which are already being almost fully utilized, under allowables that favor the fields producing oils of those grades.

Furthermore, new fields are not being found to replace reserves that are being depleted and thus to enable the state to maintain its present producing ability. During this year only one new field has been discovered.

These facts make it evident that special measures must be resorted to in supplying the Pacific demands for fuel oil, unless new fields can be found in California.

Urged in California is an advance of crude oil prices to stimulate exploration and development. Also advocated is a liberalizing of well spacing regulations and priorities restrictions to provide authority for drilling new wells and the necessary drilling equipment. California producing zones are multiple and thick, and wide well spacing does not effectively drain the oil, especially in fields yielding the heavier oils. And there are several fields, particularly in the Santa Maria district of Santa Barbara County, which could produce substantially increased volumes by further development.

Even under ideal conditions, however, there may be difficulty in meeting the heavy war time requirements for oil on the Pacific Coast. Consequently, other ideas are being entertained for supplementing or stretching the production that can be supplied by the California fields.

Suggested but so far only talked about is the proposal of building a pipe line from New Mexico and West Texas fields to the West Coast.

Other ideas that logically will be advanced are the use of railway tank cars from Texas and other states to California, further changes in California refinery yields to provide larger volume of residual fuel oil production, and restrictions on non-military use of heavy fuel oil in the Pacific Coast region, although scarcity of coal in the West makes substitution of that fuel a less important remedial measure than it is in alleviating the Eastern fuel oil shortage.

Still another idea that may be revived is the Mexican-Japanese dream of a pipe line across the narrow part of Mexico, that would lay heavy Mexican oils down on the Pacific Coast. Following the expropriation of oil company properties, the Mexican government for some time was having serious difficulty in gaining markets for its petroleum production. And in 1940, having Japan in mind as customer, the Mexican government was reported negotiating with a New York construction firm for building a pipe line which, in accordance with old plans, would cross the Isthmus of Tehuantepec between Puerto Mexico and Salina Cruz, a distance of 150 miles, thus delivering oil on the Pacific Coast.

Between those points there is already a railroad, and it has carried some oil, but is inadequate for transporting any substantial quanties. However, the road would greatly facilitate building of the pipe line. Commenting on the rumored negotiations for building the pipe line, a German writer in the October 1, 1940, issue of *Oël und Kohle*, Dr. G. F. Friedensburg, speculated that the United States government probably opposed the proposition, because of its potentialities of offering competition to American oil producers and because of its promising Japan a source of supply. At the same time, that writer asserted that after the war, other countries might technically and financially help Mexico to build the line. "In any case," he wrote, "it concerns a plan of great economic and political scope, which deserves attention not only in Mexico itself but also in the entire world."

Two Axis nations thus have looked

Worth Fighting For

Anybody who has been privileged to enjoy even one day of America's 166 years of glorious freedom knows well what we're fighting for. But we thought we'd just go out and take a picture of it.

You're looking at civilization at its peak. In these bright-eyed little shavers we offer proof sufficient that America's 166 years of pioneering, planning, toiling, studying, building, fighting, has not been wasted. Not one minute of it! Yes, here are two living symbols of what Americans in every corner of the globe today are fighting for . . . what Americans at home are working for . . . what every American would gladly die for. They're that high standard of living, that great privileged class America has so proudly achieved. They hold the America of tomorrow in their hands. Look at the appreciation in their eyes for a protection of their freedom. Their smile is thanks enough. We truly hope they, too, will never have to fight for it, but we know they'd jump at the chance.

Yes, they're the prizes our boys went away to fight for, will win for, and come home to. America will win. Her stakes are too well worth fighting for!

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Despite Big Production Increase California Stocks Still Declining

Four Weeks Period Ended	*Daily Average Crude Oil Production	STOCKS AT END OF PERIOD			
		Crude Oil	Gasoline	Residual Fuel Oil	Distillate Fuel Oil
January 24	614,450	36,494,000	16,731,000	61,992,000	12,144,000
February 21	650,650	38,407,000	17,118,000	60,870,000	12,123,000
March 21	629,250	38,844,000	17,558,000	59,822,000	12,003,000
April 18	601,550	37,772,000	17,315,000	59,077,000	11,776,000
May 16	642,300	37,864,000	17,292,000	56,635,000	11,500,000
June 13	622,950	36,517,000	16,936,000	55,901,000	11,445,000
July 11	652,600	35,471,000	16,192,000	54,818,000	12,018,000
August 8	696,700	35,827,000	15,553,000	54,283,000	11,942,000
September 5	730,050	35,869,000	15,987,000	53,658,000	12,262,000

* Daily average production during four week periods.

with favor, in the past, upon the proposed trans-Mexico pipe line, Japan naturally having viewed it as desirable, under pre-war conditions.

Now the proposal has quite opposite implications, with Mexico at war against the Axis, and with much heavy fuel oil, such as produced in large quantities by Mexico, needed by the Pacific fleets of the United Nations.

It is conceivable that the pipe line actually may be built ultimately, but if it is, it will deliver oils for use not by Japan but against Japan.

Crude production in California is 100,000 barrels per day greater than in the first of the year, and has risen 75,000 barrels in the past two months. Yet demand remains considerably higher than the enlarged output.

During the past month, there was no material reduction of withdrawals from storage in California, as further increase in demand for heavy fuel oil largely absorbed added production.

In the four weeks ended August 29 there was an average withdrawal of 45,000 barrels daily (1,269,000 total) from aggregate stocks of refinable crude, heavy crude, residual fuel oil, gas oil and distillate fuel, and gasoline. Daily average withdrawals included 46,400 barrels of residual fuel oil, 8600 of heavy crude, and 5700 of refinable crude, while there were additions of 8800 of light fuel oil and 6500 of gasoline.

During August, California had a petroleum production allocation of 767,200 barrels daily but actually produced only 728,550 per day. In July the allocation had been 739,500 barrels daily and actual output 690,600 a day, and it was necessary to draw 53,000 barrels daily from storage.

The Bureau of Mines report for July showed that during the first 7 months of this year, total stocks of all products in the Pacific Coast territory decreased 11,165,000 barrels, an average of 53,000 daily. Most of the reduction was in residual fuel oil, stocks of which came down 10,044,000 barrels.

For September, the OPC recommendation for California production of petroleum was 791,500 barrels daily, an increase of 24,300 over the August allocation; and it naturally is doubtful if the state actually will be able to produce the suggested increased volume.

WASHINGTON ROUNDUP

[*Continued from page 14*]

pared to that of the more economic movement of oil by water and pipe lines is still an issue that has not been finally settled in all aspects of the problem.

"With the financial assistance from the Reconstruction Finance Corporation, petroleum shippers should no longer hesitate to make rail shipments to the East Coast on account of the cost of transportation," it added.

The various steps taken by OPC and ODT were commended by the committee, which pointed out that its report to them of the large number of cars used for hauls of less than 100 miles, approximately 15,000, led to the ban on such traffic without ODT permission.

"With the principal sources of the United States rubber supply in the hands of Japan, and with the nation at war, the problem of petroleum transportation and allocation in the United States and especially on the East Coast, assumes greater proportions now than in the fall of last year," the committee concluded. Now as then, the committee realizes that the economic welfare of the nation revolves around efficient transportation systems. At this time, as in the fall of last year, the committee recommends the maximum use of all methods of petroleum transportation, and especially the emergency use of railroad tank cars for petroleum until assistance is made possible by the planned improvements of pipe lines, barges, and inland waterways. The committee wishes to commend every part of the transportation industry that has contributed to the progress in the delivery of petroleum during the past several months. Companies owning pipe lines, barges, tank cars and tank trucks have cooperated in the rapid movement of oil to the East Coast and have formed an effective national transportation system by placing the common interest above special interests. But in order to meet all essential needs, the deliveries must continue to increase, and this committee is pledged to see that every possible resource is utilized in that direction.

"The work of the Office of the Petroleum Coordinator for War, particularly that of the division of transportation and that of the division supervised by the Petroleum Industry War Council has been of special interest to the committee. The relationships achieved by the council with civilian, military and governmental agencies appear to have brought about a remarkable degree of cooperation between government and business in this phase of the war program. Thus most of the debatable issues of the petroleum transportation problem that were reported to this committee in August and September of 1941, have been clarified and settled."

As the committee submitted its report, OPC announced that rail deliveries into the seaboard area during the week ended September 19 reached 856,710 barrels daily.

☆

ALCOHOL: All-out conversion of the distilled-liquor industry will assure the production of all the alcohol necessary for smokeless powder, mustard gas, medical needs and an "adequate supply" for synthetic rubber, it was promised Setpember 23 by the Distilled Spirits Institute.

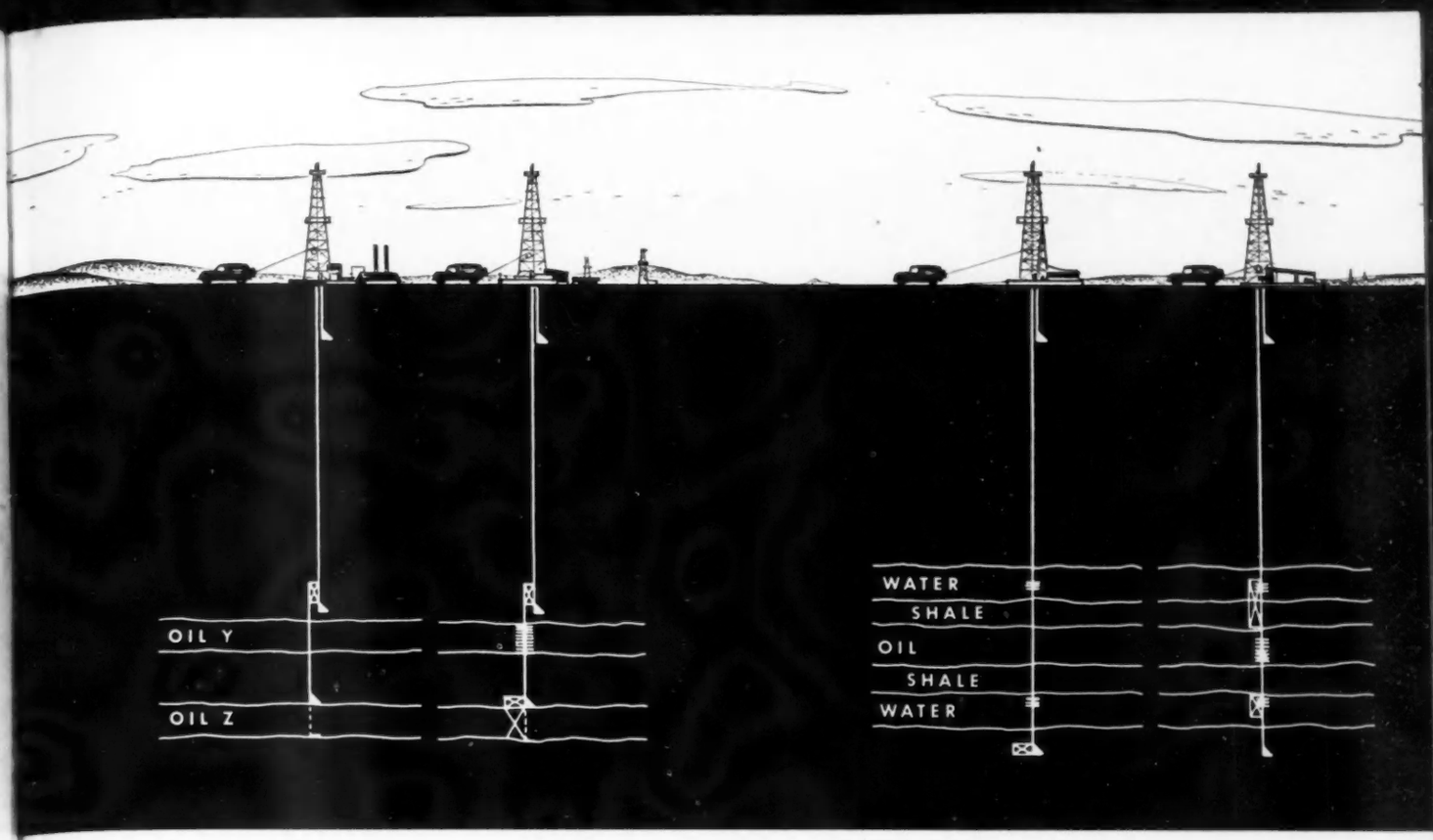
In a voluntary program, without any order or request from the government, the industry is rapidly closing down the production of liquor and within a month will be devoted 100 percent to alcohol production, Howard T. Jones, secretary and general counsel of the institute, asserted.

In passing, however, Jones assured the country that it is not going "dry" immediately. Enough liquor is maturing in storage to meet normal needs for 3½ years, he said.

Under its conversion program, the industry will save 1,200,000 tons of sugar this year which otherwise would have gone into alcohol but was not needed when the whiskey men started making alcohol from grain.

One hundred million bushels of surplus grain which had been bought by the government will be used this year for the making of alcohol.

The alcohol made by distillers from grain will produce 200,000 tons of synthetic rubber and, since many of the plants are in the Mid-West, will provide synthetic rubber plants with near-by sources of supply, thus conserving tank cars and tankers for fuel oil and gasoline shipments, it was said.



To Correct High Gas/Oil Ratio--Where the entire sand section has been perforated and the well produces with an exceedingly high gas/oil ratio, operators can perform "squeeze" cement job through gun perforations in the gas sand. This makes it possible to close off entirely the free gas area and gun perforate only sufficient number of holes to allow the well to produce at the correct gas/oil ratio.

Water Exclusion--Water entries from below or above an oil zone to be perforated may be tested and the water completely excluded by perforating and "squeeze" cementing. This allows the oil sand to be produced efficiently.

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Lane-Wells Gun Perforator applications made possible production economies during years when low costs were imperative. Today these same Gun Perforator Applications can provide better well control to effect maximum production efficiency.

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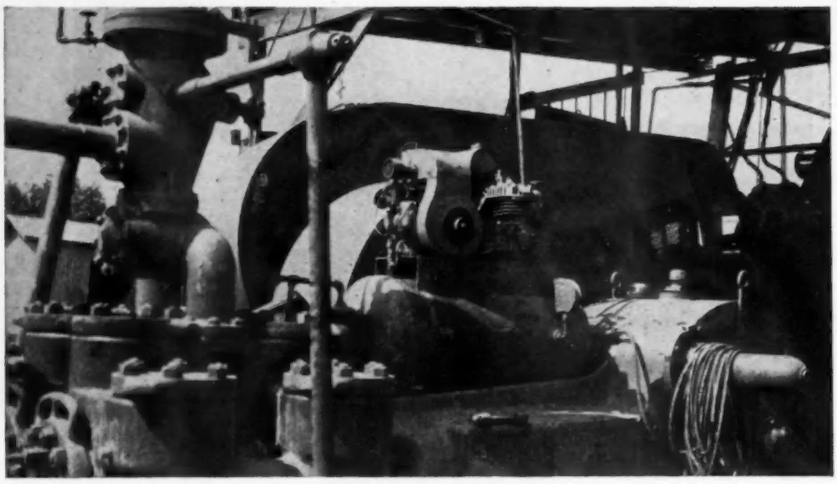
PRACTICAL OPERATING *Hints* FOR

1. *AIR COMPRESSORS*

Mud-Pump Mounting Protects Auxiliaries



Utilizing the open space between the crosshead guides of the pump as site for starting air-jammer safeguards unit and concentrates equipment for reduced handling and quicker moves.

AIR FOR STARTING the engines on a mechanical power unit, as well as for other miscellaneous use around the rig, is stored by a small compressor, powered with a single-cylinder gas engine, and mounted between the crosshead guides of the power-driven mud pump.

This setting of the compressor gives it the protection of the heavy pump casting, gets it out of the way, and at the same time utilizes doubly that portion of the shelter over the mud unit. Weight of the compressor and tank which serves as mounting for the unit is slight as compared with the mud pump, and makes no appreciable difference in the handling of the big pump during shifts.

Piping manifolded to the tank is carried below the pump mounting to the engines powering the rig, while an air hose on a valve at the opposite end of the storage tank provides compressed air for blowing, powering a drill, and other work around the rig.

2. *ENGINES*

Supplementary Brace Stiffens Power Mount

IN ADDITION to the usual turnbuckle between two power units on a mechanical rig, one contractor adds rigidity and greatly prolongs the life of the V-belt drive by a box-section brace which ties the two engine skids together and relieves the turnbuckle unit of all save stresses sustained when spacing the units.

The box brace lies atop the skids, and is slotted at the ends to take bolts which pass through the box and into the skids. By loosening the nuts on these bolts and adjusting the turnbuckles, the belts may be tightened readily, the box brace being thoroughly tightened again to insure the permanence of the setting.

If the engines are to be moved separately, it is necessary to remove the brace, but if the two are handled together on their sub foundation, the brace may be left in place, tending by that much more to unitize the power for transportation.

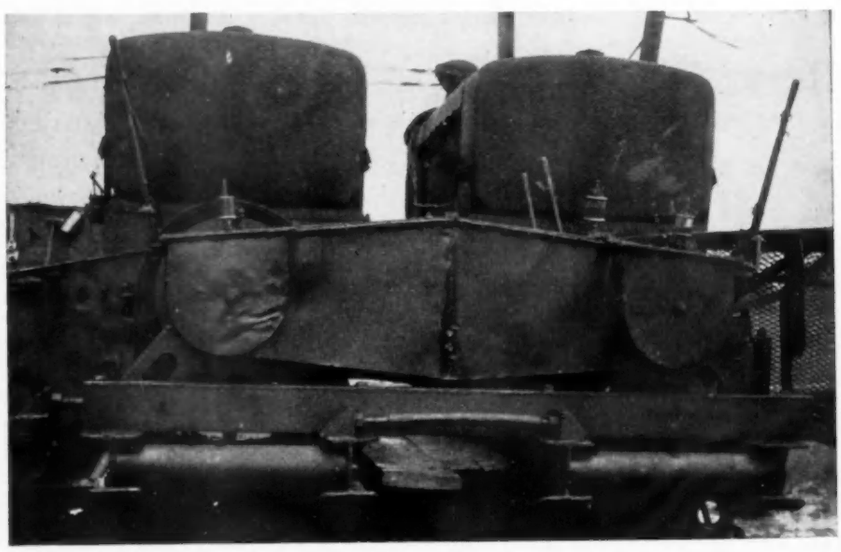
3. *MUD PUMPS*

Trough Prevents Harm To Unit Foundations

WHEN a mud pump can be set directly on the ground, as is possible in Illinois when drilling time is short, provision must be made for removal of the water used for flushing the mud pump rods, or one end of the pump site will be so softened as to create a condition of improper support for the unit, with consequent breaking of connections or possible damage to the skid-mounted unit itself.

One contractor welds a trough across the skid directly below the drains in the pump casting, with a pipe from one end to carry the flow to the mud pit.

This not only carries away the flush-

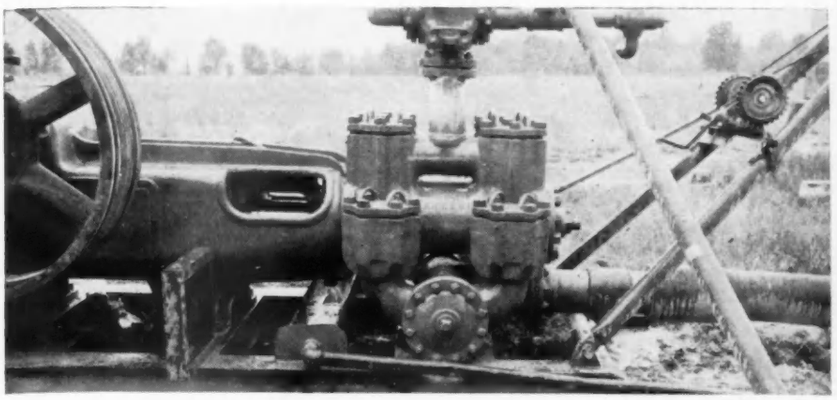


Box-section brace slotted to fit main engine skids permits bettering rigidity of set-up and aids in maintaining desired spacing of compounding pulleys on group V-belt drive unit.

THE practical operating hints for the drilling rig, production man and pipeliner, appearing regularly in these pages, are secured from oil operations everywhere and offer suggestions that will help to improve operating efficiency and safety.

The items give an excellent picture of the remarkable ingenuity being exercised by the operating divisions of the industry. Contributions to these features will be paid for at the rate of $5 for each illustrated item accepted. Address contributions to "The Editor, The Oil Weekly, Houston."

THE DRILLING RIG



Open trough welded under pump piston packing drains off wash water and prevents premature softening of earth below mud end. Gap below casting permits visual check of flush flow.

ing water but also, by reason of the open gap between pump casting and trough, permits quick check of the water being delivered to each rod.

The drain line may be unscrewed at the ell in the trough end plate for transportation, the remainder of the drainage unit being within skid limits and well protected thereby.

4. TRANSPORTATION

Special Wagon Aids Heavy Equipment Shift

A TIME and labor-saving vehicle upon which the entire skid-mounted mud-pump assembly may be loaded has been devised by Mene Grande Oil Company, for use in the Oficina field, eastern Venezuela. The vehicle consists of a wide frame, welded up from drill pipe with the wide rear section slung between a pair of heavy treads from a tractor wagon.

The front of the frame is narrowed to afford a king-pin type of suspension, with concentration at a single point to facilitate turns.

Much time is saved by loading the pumps on this movable platform instead of dismantling and hoisting aboard trucks for inter-location shifts. When using the special carrier, less than half of a working day is required to get the pumps into operation once they have reached the new site.

The vehicle is usually towed behind a caterpillar tractor, not only to provide all the power needed, but also to afford adequate control of the heavy unit over all kinds of terrain encountered on some of the moves.

Skidding of heavy equipment onto this low platform reduces accident hazards and speeds moves over former truck body loading methods.

Unitized structure of heavy drill pipe, mounted on track-laying members, affords ideal loading platform for dual mud pump set-up, reducing handling and simplifying new location tie-ins.

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Professor of Petroleum Engineering at Stanford University

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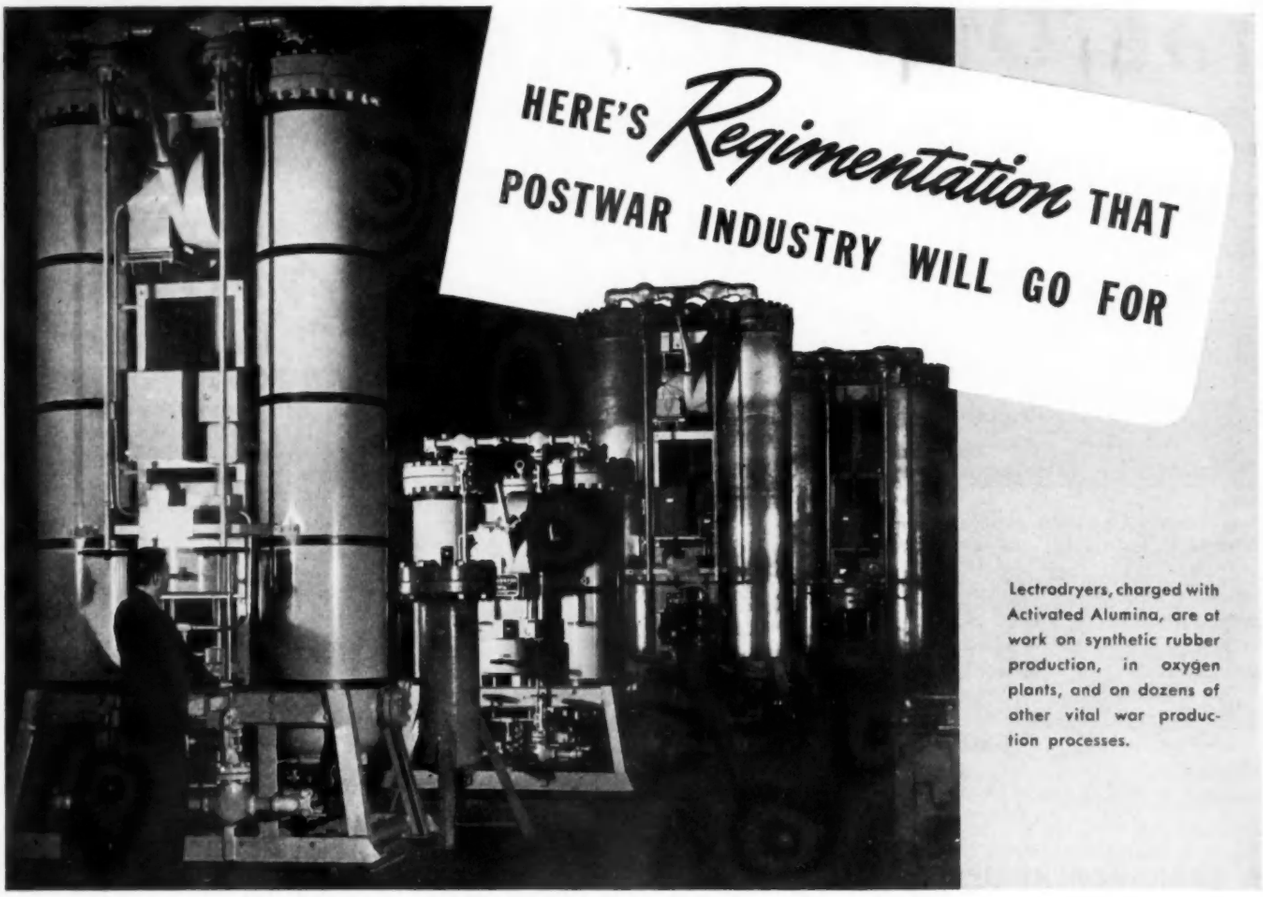

Lectrodryers, charged with Activated Alumina, are at work on synthetic rubber production, in oxygen plants, and on dozens of other vital war production processes.

Moisture-control and drying equipment is adopted by one industry after another, as the demand for implements of war requires greater output, more exacting production, and new products. Control of the moisture content of working atmospheres and of materials being processed permits standardization of manufacturing processes and their products.

Alorco Activated* Alumina is 'way out in front in this moisture-control picture. It's the drying agent that Lectrodryers are charged with. It's the drier so widely used by the gas and petroleum industry, and in so many synthetic chemical processes.

It's safe to say that postwar industry will never go back to hit-or-miss moisture-control methods. And Alorco Activated Alumina is the drying agent that best meets industry's requirements. It dries liquids and gases DRY, to dew points of –110° F. It is dependable. ALUMINUM COMPANY OF AMERICA (*Sales Agent for* ALUMINUM ORE COMPANY) 1962 Gulf Bldg., Pittsburgh, Pa.

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ACTIVATED ALUMINAS

"ALORCO" ALORCO PRODUCTS

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The Week's News

OPC October Allocation Down from September

October production of all petroleum liquids will be less than the actual output of crude alone in the same month last year, it was disclosed September 22 with announcement by OPC of recommendations for the coming month.

A daily production rate of 4,066,200 barrels was recommended by the coordinator, a drop of 6900 barrels from the certifications for this month and 195,000 barrels under the October, 1941, production of 4,261,200 barrels of all petroleum liquids. Last October's crude production averaged 4,069,200 barrels daily.

The decline from September, it was explained by Deputy Coordinator Davies, is due to some extent to an anticipated drop in gasoline demand due to the rubber conservation drive and East Coast rationing. That decline, however, is seen as greater than apparent from the figures since, to insure capacity production of war products, it was necessary to certify that certain unspecified quantities and types of Texas crudes having qualities especially suitable for the manufacture of such products shall be made available in specific refining centers.

No production rates were certified to specific Texas fields, it was said, since the certifications were for minimum essential quantities of specific types of crude and it may be desirable to effect some adjustment of supply among the fields within any group capable of producing the desired crude, such adjustments being a function of the Texas Railroad Commission.

The 6900-barrel reduction from the September recommendations will be felt chiefly in Illinois, where capacity is declining, and in California, given its first cut after several months of steadily increasing output. However, it was explained, while California originally was recommended for 791,500 barrels a day, the actual allocation approved by OPC for September was only 779,533 barrels, so that its October quota of 782,000 barrels will represent an increase over last month's actual production.

The heaviest increase granted was to Texas, raised from 1,397,800 to 1,407,600 barrels a day, compared with 1,543,500 barrels in October, 1941, but a number of other states had their quotas increased or decreased.

In District 1, New York was given an increase from 15,200 to 15,400 barrels, while Pennsylvania was reduced from 52,300 to 50,800 and West Virginia from 16,600 to 16,000 barrels. The total for the district will be 82,200 barrels, against 84,100 barrels for this month and 78,800 barrels for last October.

With the exception of Kansas, increased from 291,900 to 294,000 barrels; Ohio, increased from 11,200 to 11,400 barrels, and Oklahoma, increased from 415,300 to 417,000 barrels, all District 2 states were reduced: Illinois, from 289,200 to 280,000 barrels; Indiana, 19,300 to 19,000 barrels; Kentucky, 14,000 to 13,800 barrels; Michigan, 66,700 to 65,700 barrels, and Nebraska, 3,900 to 3,500 barrels; total for the district is reduced from 1,111,500 to 1,104,400 barrels, compared with 1,235,300 barrels last year.

In District 3, beside the increase given Texas, Louisiana is increased from 334,800 to 337,200 barrels and New Mexico from 98,100 to 101,100 barrels, while Arkansas is reduced from 81,900 to 79,500 barrels and Mississippi from 50,200 to 50,000 barrels. Total for the district is 1,975,400 barrels against 1,962,800 barrels for September and 2,144,200 barrels a year ago.

Colorado, in District 4, was the only state left unchanged, at 7,000 barrels, Montana being increased from 22,800 to 24,400 barrels and Wyoming reduced from 93,400 to 90,800 barrels, cutting the total for the district to 122 200 barrels from 123,200 barrels for September, compared with 113,000 barrels produced in October, 1941.

Market Demand

October market demanded for domestic crude will be 3,845,200 barrels daily, 25,000 barrels more than the demand estimated for the current month but 304,900 barrels, or 7 percent less than actual demand in October, 1941, it was announced by the Bureau of Mines September 25. This increase, in the face of a decrease in OPC recommendations for production of petroleum liquids, it was explained, is due primarily to a larger production of gasoline and a small reduction of motor-fuel stocks than was anticipated.

"The bureau's forecast of total motor-fuel demand for the third quarter of 1942 amounted to 158,300,000 barrels, an estimated decline of 17.4 percent compared to the same period of 1941," it was stated. "July demand was much larger than expected and probably included an unusual flow into distributors' stocks as well as less curtailment than was anticipated in areas outside of the East Coast. However, current figures for August and early September indicate a lower demand for motor fuel than was forecast so that the actual demand for the A quarter may not be much higher than the forecast.

"Plans to extend the area of gasoline rationing and to initiate the winter rationing of heating oils indicate a further curtailment of total civilian demand during the coming months. Under these circumstances, the demand for crude petroleum might be expected to decline. However, due to the sharp drop in imports, domestic crude petroleum must fill the market formerly supplied by foreign oils. Until recently, this increase in demand was offset by the continued liquidation of refined stocks that reduced crude runs to stills to a low level. When this liquidation of stock ceases, total demand must be met from new production. Consequently, even with further curtailment of civilian consumption, the bureau does not expect the demand for domestic crude to decline to any great extent in the near future."

The bureau placed October demand for motor fuel at 50,700,000 barrels, of which it is estimated 1,200,000 barrels will come from stocks. Direct sales of natural gasoline are figured at 1,600,000 barrels, making an indicated refiner production of 47,900,000 barrels, which it distributed among the several refining districts, as follows:

East Coast, Inland Texas, Texas and Louisiana Gulf Coast and Inland Louisiana-Arkansas, 21,300,000 barrels; Appalachian, 1,900,000 barrels; Indiana, Illinois, Kentucky, etc., 10,850,000 bar-

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Compact Session Will Bear Down on Gas

The importance of natural gas conservation as a factor in the national economy will be the theme of the sessions of the Interstate Oil Compact Commission at the Palmer House in Chicago, October 1-3, according to Chas. L. Orr, secretary of the commission.

Governors Leon C. Phillips of Oklahoma, Payne Ratner of Kansas, John Miles of New Mexico, and Dwight H. Green of Illinois, will be in attendance. Governors of other oil and gas producing states have been invited and may attend.

The first day of the meeting will be devoted to committee meetings and informal conferences. Friday and Saturday mornings the commission will have general sessions open to the public.

Friday afternoon the commission's research and coordinating committee will hold an open technical session.

Governor Green, Clarence Smith, Illinois Compact representative, and Illinois operators will entertain compact officials and guests with a dinner at the Palmer House Friday evening.

A feature of the meeting will be extensive exhibits by the Illinois Geological Survey, as well as exhibits by the commission.

Products made from natural gas will be shown by some of the leading oil, gas, and chemical companies.

rels; Oklahoma 2,430,000 barrels; Kansas, 2,870,000 barrels; Rocky Mountain, 1,340,000 barrels; California, 7,210,000 barrels.

Natural gasoline to be blended at refineries is estimated at 4,540,000 barrels. The yield of gasoline from crude is estimated at 38.3 percent, which, applied to the straight-run and cracked production of 43,360,000 barrels gives total crude runs of 113,200,000 barrels, or 3,651,600 barrels daily.

Crude oil for export and to be used as fuel, and losses, is estimated at 6,400,000 barrels, making the estimated demand for domestic crude 119,200,000 barrels for the month.

Texas October Allowable 1,572,602 Barrels Daily

The Texas Railroad Commission's order for October fixes an allowable which it estimates will result in production of 1,372,602 barrels daily. In addition to this the state will produce about 200,000 barrels of distillate and fluids not covered by the crude oil proration order, which means a net production of about 1,572,602 barrels daily.

Washington estimated Texas demand at 1,407,600 barrels daily, so that the actual production will probably be slightly in excess of OPC figures.

Most of the allowable adjustments were effected by the use of additional shutdown days. Several classifications were made and most fields will be shut down 9 days, October 3, 4, 10, 11, 17, 18, 24, 25 and 31. Since October has 31 days, this means one more producing day than during September.

The orders resulted in a decrease of 6000 barrels for Southwest Texas, and smaller cuts for East Central Texas and West Central Texas. The Gulf Coast area was raised 4793 barrels. East Texas field, by reason of the additional producing day, was allowed 3630 barrels daily more than last month. West Texas allowables were raised 2672 barrels, and North Texas was increased about 1000 barrels. The figures by districts are shown in the table below. These are net allowables after deductions for shutdowns:

District	Oct. 1	Sept. 19
1	20,862	20,840
2	100,088	99,707
3	296,087	291,294
4	101,819	107,841
5	18,228	19,118
6	77,279	68,736
East Texas	364,351	358,721
7B	27,887	28,570
7C	19,195	19,105
8	200,633	197,961
9	134,779	133,776
10	93,053	92,167
Total	1,455,261	1,437,836

82,659—under production, estimated.

Fields exempt from all shutdowns include:

District 1. Darst Creek Loma Alta, Luling-Branyon, and Salt Flat.

District 2. Cordele, Greta Deep, Heyser, Mellon Creek, Mission River, Oakville, Plummer, Refugio-Fox and Victoria.

District 3. Arriola, Bammel, Barbers Hill, Batson New, Beaumont West, Boling, Buckeye, Clay Creek, Conroe, Cotto Lake, Cotton Lake South, Damon Mound, Danbury Dome, Esperson Dome, Eureka Heights, Eureka Heights Deep, Goose Creek, High Island, Hitchcock, Hull, Humble, Humble Light, Kubela, Livingston, Lochridge, Louise, Mercy, Magnet-Withers, Manvel Oligocene, Markham, Mykawa, Mykawa New, North Dayton, Orange West, Raccoon Bend Shallow, Raccoon Bend Cockfield, Sandy Point, Silsbee, Turtle Bay, Thompson South, West Columbia and West Columbia New.

District 4. Boyle, Charamousca, Clara Driscoll 3800-foot Sand, Eagle Hill, Minnie Bock, Moca, Seven Sisters, Sam Fordyce, North Sam Fordyce, Plymouth, Rincon and White Point.

District 5. Mexia, Powell, Richland, Sulphur Bluff and Wortham.

District 6. Boggy Creek, Cayuga, Grapeland, Lone Star, Talco, Rodessa and Trinity.

District 7-B. Eastland County, Erath County, Loving and Stephens counties.

District 7-C. Beddo, Big Lake and World.

District 8. Hendricks, Howard-Glasscock, Iatan-East Howard, Jamison-Ollard, Leck Monroe, Taylor Link, Snyder and Yates.

District 9. Johnson Pool in Cooke County, K-M-A Ellenburger, Hu.ts-Owens, Joy-Mississippi Lime, Antelope and Vogtsberger.

The following fields are subject to shutdown October 2, 4 10 and 11:

District 2. Lolita and West Ranch.

District 3. Lovell's Lake, Amelia, Sugarland, Clear Lake and Webster.

District 4. Nichols and Orange Grove.

Distrcit 9. Angelope (Mississippi Lime), Bonita, Chapman - McFarlin, Clinginsmith, Fargo, Hapgood, Hoefle, Kadane, Kadane Shallow, Mankins, Mueller, Ringgold, Sanders, Scotland, Scotland (Mississipi Lime), Walnut Bend, Wilson and Forestburg.

The Hawkins field in District 6 is to shut down October 3, 4, 10, 11 and 17.

The Wasson field in West Texas is subject to seven shutdowns: October 3, 4, 10, 11, 17, 18 and 24.

The Panhandle is subject to eight shutdowns: October 3, 4, 10, 11, 17, 18, 24 and 25.

The Sand Hills Ordovician field in District 8 is subject to twelve shutdowns: October 3, 4, 7, 10, 11, 14, 17, 18, 24, 25, 28 and 31.

Goldsmith in West Texas is subject to fourteen shutdowns: October 1, 3, 4, 7, 10, 11, 14, 17, 18, 21, 24, 25, 28 and 31.

South Cowden, Dune, Keystone, Lime, Means, Penwell, Waddell and North Ward are subject to sixteen shutdowns: October 1, 3, 4, 5, 7, 10, 11, 14, 17, 18, 21, 24, 25, 26, 28 and 31.

No mention was made of the proposal to change the method of allocation from allowables for each well to lease allowables. This program was discussed at length during the statewide hearing, but evidently the commission is not yet prepared to issue an order making the change. Commissioner Thompson has indicated his approval, and Commissioner Culberson has said he is opposed to the plan. The decision, then, rests with Commissioner Jester, who has made no public statement concerning the program.

Texas Permits

The Texas Railroad Commission last week approved permits for drilling 148 wells in Texas, an increase of 85 as compared with the week before.

There were 29 locations approved in Southwest Texas, 9 in the Gulf Coast, 18 in West Central Texas, 21 in West Texas, 46 in North Texas and 17 in the Panhandle.

Natural Gas Section Meets October 5

Discussions of problems arising out of the natural gas industry's relations with the government during war will dominate the meeting of the Natural Gas Section of the American Gas Association at the annual meeting of the association at the LaSalle Hotel in Chicago, October 5.

Following some observations to be made by George S. Hawley, president of the association, President-Elect A. F. Bridge and Managing Director Alexander Forward, a symposium on "War Requirements in the Natural Gas Districts" will be held under leadership of J. French Robinson, chairman of the Natural Gas Section. A speaker from the War Production Board is expected to present the subject "WPB Orders and Their Application to the Natural Gas Industry."

E. Holley Poe, director of the Natural Gas and Natural Gasoline Division of OPC, will discuss "OPC Orders and Their Application to the Natural Gas Industry." Discussions will follow presentation of each subject on the program.

Drilling Contractors Meet At Tulsa November 19-20

American Association of Oilwell Drilling Contractors will hold its second annual meeting in Tulsa, November 19 and 20. A complete program will be announced in the next few weeks.

The drilling industry has for some time been attempting to adjust itself to changing conditions brought on by the war, and this meeting will recognize the importance of current problems now confronting all drilling contractors.

AIME Los Angeles Session Features Recovery Methods

Technical program and other arrangements for a meeting of the Petroleum Division of the American Institute on Mining and Metallurgical Engineers at Los Angeles, October 15 and 16, has been announced. Sessions will be held at the Ambassador Hotel.

The technical program will feature the study of modern recovery methods and factors affecting efficient production of oil and gas.

Registration will start at noon Thursday in the theatre lobby and Harry P. Stolz, Division Chairman, will convene the initial session in the theatre at 1:30 o'clock. Sessions will be open to the public.

"It is clear," says Lieutenant Commander Stolz, "that the oil industry has stepped forward admirably to assume the great responsibilities brought by the war, and this can be traced to the concerted work of individuals within the industry. To the extent that this is a technical war and and largely a battle for oil at present, each petroleum engineer and geologist owes it to the community to devote his best talents and efforts toward getting he oil above ground and to the basis where it is needed. The Pacific theatre of war makes the California operators particularly aware of these responsibilities. Gasolines, butadienes for rubber, lubricating oils, fuel oils, all are absolute necessities. Our meeting in Los Angeles will be directed toward the latest technical procedures and practice for increasing recovery and gaining the

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A dinner for Institute members has been arranged by C. P. Watson, chairman of the Southern California Section, for Friday evening, at the Ambassador, at which the Section will be hosts to the Petroleum Division. A prominent speaker will address the members on a subject to be announced.

The technical program was prepared by E. G. Trostel, assisted by Lawrence E. Porter, Howard C. Pyle, John F. Dodge, John E. Sherborne, James T. Carriell, Robert B. Moran, Ralph M. Marshall, H. K. Armstrong, Charles R. Dodson, Harold T. Wyatt, and V. H. Wilhelm.

Pyle and Charles R. Dodson will preside as chairmen over the Thursday afternoon session, following the opening talk by Lieutenant Commander Stolz. The program of Friday morning will be sponsored by junior members of the Institute, and will be presided over by John Sherborne and James T. Carriell, chairman of the junior members. The closing afternoon session, which may be directed toward the economics of modern recovery methods, will be under the direction of Lawrence E. Porter, chairman, and John F. Dodge, co-chairman.

Prior to the meeting of Thursday afternoon, a luncheon for officers and speakers for the day will be held at the hotel, and similarly there will be a breakfast for officers and speakers of the second day prior to the session on Friday morning.

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Program

Thursday, October 15

12:00 M. Theater Lobby. Registration of all members and guests. Sale of technical papers, $1 per set.

1:30 P. M. First Technical Session. H. C. Pyle, chairman; C. R. Dodson, co-chairman.

Use of P.V.T. Data in Formulating the Production Policy for an Oil Reservoir, by W. Tempelaar-Lietz, Shell Oil Company.

Reservoir Analysis and Geologic Structure. (T.P. 1527; Preprint), by J. M. Bugbee, Baroid Sales Division, National Lead Company.

Formation Volume and Viscosity Studies for the Santa Maria Valley Field, by R. H. Olds, B. H. Sage, and W. N. Lacey, California Institute of Technology.

To be read by title:

Phase Behavior in the Methane-propane - n-pentane System. (T. P. 1940; Petr. Tech., July), by R. H. Dourson, B. H. Sage and W. N. Lacey, California Institute of Technology.

Joule-Thomson Coefficients for Two Natural Gases. (T.P. 1504; Petr. Tech., Sept.), by B. H. Sage, D. F. Botkin and W. N. Lacey, California Institute of Technology.

Permeability as a Function of the Size Parameters of Unconsolidated Sand. (T.P. 1942; Petr. Tech., July), by W. C. Krumbein, University of Chicago, and G. D. Monk, Iowa State College.

Steel and the Oil Industry During War, by E. L. Davis, Office of Petroleum Coordinator, District 5.

Scrap as Related to the Oil Industry, by Louis M. Dreves, War Production Board.

Friday, October 16

10:00 A. M. Second Technical Session, sponsored by Junior Members. J. E. Sherborne, chairman; J. T. Carriel, co-chairman.

Effect of Interfacial Forces on the Flow of Oil through Water-wet Sands, by C. A. Arismendi and P. P. Nibley.

Equilibrium Relations of Natural Gas and Oil at High Pressure and Temperature, by M. B. Standing, Standard Oil Company of California.

Effect of Infiltration of Drilling Fluid on Electric Logs, by R. H. Zinszer, Union Oil Company of California.

Well Logging by Radioactivity, by John C. Stick, Jr., Lane-Wells Company.

Oil-field Emulsions and Their Electrical Resolution, by Robert L. Pettefer.

1:30 P. M. Third Technical Session. L. E. Porter, chairman; J. F. Dodge, co-chairman. Symposium on Recovery as Affected by Production Techniques.

The Problem of Increasing Recovery, by E. G. Trostel, OPC, District 5.

Speculations on the Application of Laboratory Data to the Problem of Reservoir Performance, by E. C. Babson, Union Oil Company of California.

A Review of Recovery Experience, by F. E. Minshall, Continental Oil Company.

Primary Pressure Control: Will It Increase Recovery? by T. H. Acres, Richfield Oil Corporation.

A Method of Approach to Determining the Economics of Pressure Maintenance, by N. van Wingen, Richfield Oil Corporation.

A Brief Review of Current Thought on Recovery by Secondary Control, by J. A. Lewis, Core Laboratories, Inc.

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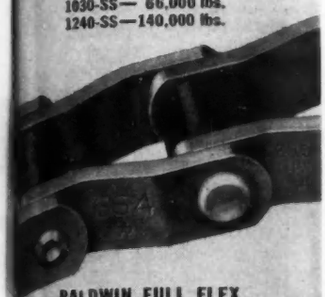

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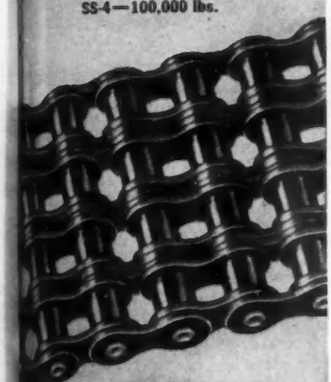

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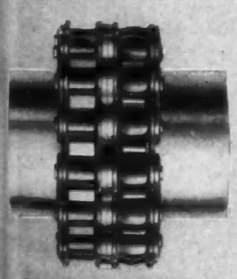

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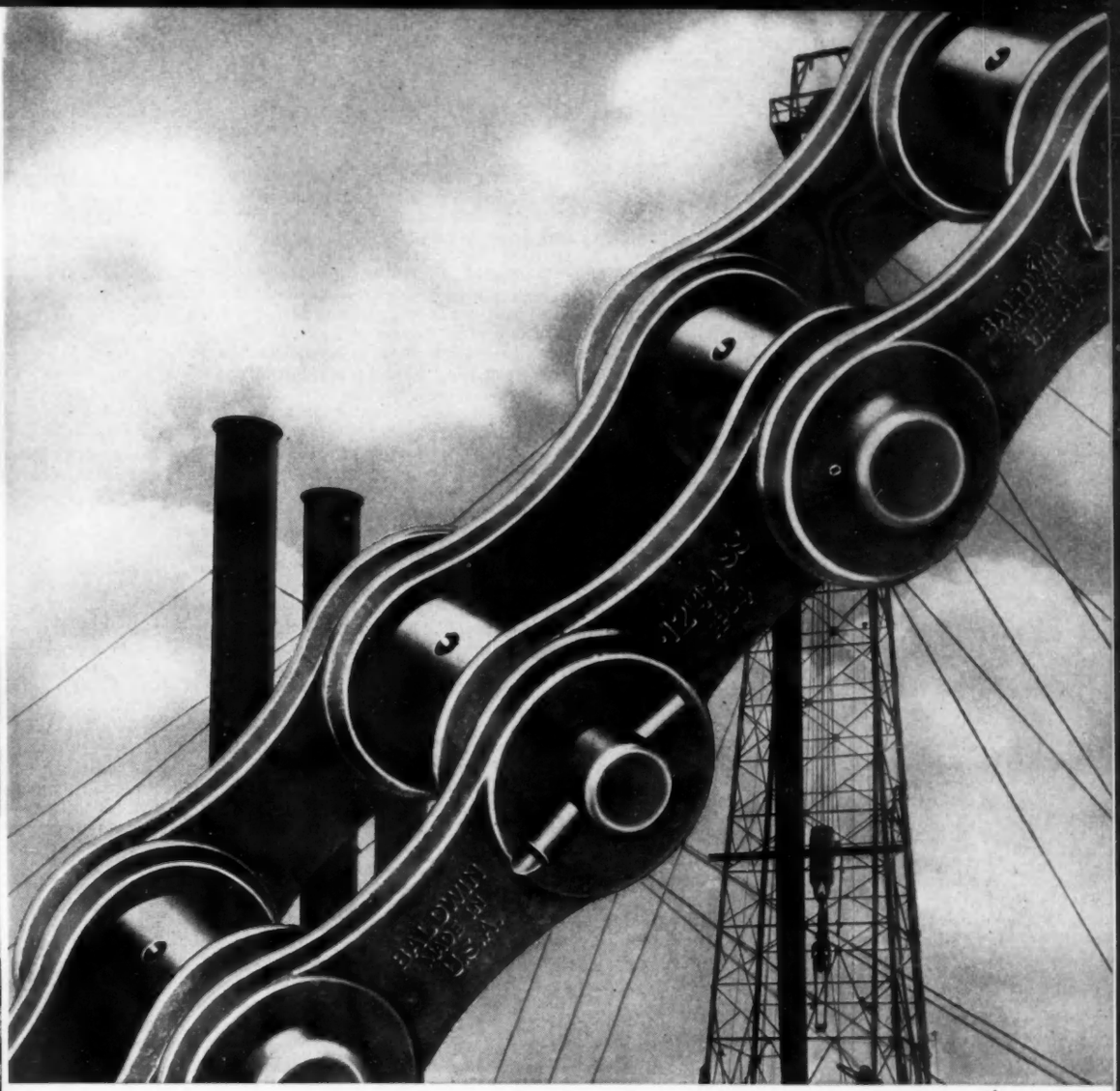

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7:00 P. M. Informal Stag Dinner, Gold Room, Ambassador Hotel. Sponsored by the Southern California Section. C. P. Watson, chairman, Southern California Section, presiding. After-dinner talk, speaker to be announced. Entertainment.

Officials and committees engaged in organizing the meeting are as follows:

Harry P. Stolz, chairman, Petroleum Division.

C. P. Watson, chairman, Southern California Section.

E. G. Trostel, associate chairman, Papers and Programs Committee, Petroleum Division.

George W. Nilsson and Leigh M. Battson, Committee on Arrangements and Entertainment.

Dwight Whiting and Clarence J. Coberly, Finance Committee.

Walter Abel, Secretary and Treasurer.

The officials of the Petroleum Division are Harry P. Stolz, chairman; W. S. Morris. V. C. Smith, and C. A. Warner, vice chairman; Harold Vance, secretary-treasurer; Chester Naramore, executive secretary.

The executive committee of the Southern California Section consists of C. P. Watson, chairman; Leigh M. Battson, and Clarence J. Coberly, vice chairmen; Walter D. Abel, secretary-treasurer; Walker S. Clute, A. C. Rubel, Dwight Whiting, V. H. Wilhelm; James T. Carriel, Junior Division; Carlton Beal, Coastal Division; Paul J. Howard, Valley Division.

Refiners Consider Plant Protection at Tulsa Session

Western Petroleum Refiners Association met in special session in Tulsa September 24 to consider protection of refineries, gasoline plants and related equipment in times of war. Lieutenant Colonel Arthur H. Denison, air-plant-protection officer, Mid-Western Procurement District, Wichita, addressed the meeting on "The Importance of Protecting Petroleum Facilities in Time of War." Following this paper, the meeting was opened for discussion of problems and for the consideration of suggestions in line with the protective effort of the association. As a forward step in promoting plant safety in these times, it was recommended by the more than 50 present that future meetings of technical men, operators and engineers be held and that such men offer any suggestions bearing upon any phase of the subject.

Colonel Denison emphasized that protection is wholly a problem of the industry. The military, however, is empowered to enforce protection of essential commercial and industrial establishments. He explained that such essential concerns or plants are listed as P-1, P-2 and P-3, with the P-1 designation indicating the most essential. His office makes recommendations (limited to this procurement area which roughly includes the Mid-Continent producing sector) and inspects precautions taken. Recommendations are made on the basis of (1) reduction of possible delivery irregularities by decreasing dangers or other sources tending to reduce these scheduled deliveries, and (2) raise standards so that necessary output is available during war and so that this standard is obtained following war.

It was pointed out that with the present increase in plant output, involving as it does an increased number of shifts and unit hours worked, normal accidents should increase. This has followed and should correctly be attributed to increased plant activity rather than to some outside source. In addition, with armed forces taking many experienced men, green hands are being trained to take over jobs, and these inexperienced helpers are more liable to accidents than those more practiced in the lines considered. It was to be remembered also that an oil refinery has 100 points at which serious fires can start to every 3 such points in other industrial plants.

Asked as to practice blackouts in the upper Mid-Continent area, the Colonel stated that he did not feel that regular blackout practice was desired in the area. Plant managements should, however ascertain how much time might be required to obtain an effective blackout. Also, the management should determine or make available the equipment necessary to effective plant blackouts in case such would be required on short notice in the future. It was felt that the greatest present danger is from fires of whatever origin, employe failure and from personnel error.

John Day, secretary of the association, mentioned the work that has been done along the Western and Gulf Coasts, stating that because of their position they had experimented with protective ideas that might find application in other areas. Among other efforts he spoke of smoke from flumes and smoke derived from burning waste oils in ditches dug to windward of the plants. He suggested that ideas similar to these would be welcome.

Natural Gasoline Output, Stocks Increase in July

Production of natural gasoline and allied products continued to increase during July, with a daily average for the month of 9,218,000 gallons compared with 9,181,000 gallons in June, according to the monthly report of the Bureau of Mines.

Increases in production occurred in Louisiana, New Mexico and California, and decreases in Oklahoma and East Texas, the bureau said.

Natural-gasoline production for the month was 170,478,000 gallons against 162,792,000 gallons in June, other production including 54,600,000 gallons of cycle products against 52,206,000 gallons; 10,080,000 gallons of iso-butane at natural gasoline and cycle plants against 9,492,000 gallons; 50,610,000 gallons of liquefied petroleum gas at natural gasoline and cycle plants against 50,946,000 gallons, and 20,622,000 gallons of liquefied refinery gas at refineries against 21,042,000 gallons.

Stocks at refineries increased from 112,182,000 gallons June 30 to 120,456,000 gallons July 31, but stocks at plants and terminals declined from 161,532,000 to 156,240,000 gallons in the same period, the bureau reported.

Texas Commission Will Hold Hearing on Line Removal

The Texas Railroad Commission has scheduled for September 29, a hearing on application of Sinclair Refining Company to move its Panhandle pipe line to South Texas. The hearing will be limited to the question of removing the line.

Rationing Will Not Wreck Oil Industry, Says Jester

The oil industry will not take a drubbing from pending gasoline rationing, Beauford Jester, Texas Railroad Commissioner, said last week in his first press statement since taking his place on the commission.

Saying there is no cause for alarm as has been spread by other state officials, the commissioner asserted that the deterring effects of rationing would be equalized or offset by constantly increasing demands for other petroleum products due to the war.

Predicting that the entire gasoline market for Texas refineries would not disappear, Jester said many civilian automobiles would be kept rolling with synthetic rubber production even under rationing.

He requested that a statewide oil hearing be conducted to hear testimony on the question of authorizing production of oil by lease allowables rather than on a per-well basis. The proposal is designed to simplify operation and help solve manpower problems and rising production costs.

Commissioner Olin Culberson opposes the plan, charging that it would deprive the commission of its regulatory powers.

Last week Jester said that he thought it might be necessary to hold a statewide hearing to discuss this subject alone, or else to hold separate hearings on each field. Several oil operators have discussed the matter with him, Jester said, and they are divided on the question.

He thought it wiser to move slowly to avoid any serious error. Neither does Jester plan many changes in commission personnel immediately, he said. He believes that most key appointments should be approved by the entire commission rather than be appointments by one man.

Contract Awarded for Florida Line Construction

Contract for the construction of a 194-mile 8-inch products line across northern Florida for the Defense Plant Corporation, a unit of the Reconstruction Finance Corporation, has been awarded to Anderson Brothers, Tulsa. Installation and operation of the carrier will be under the direction of the Trans-Florida Pipe Line Company. This company was formed by officials of American Liberty Pipe Line Company after the latter sold its East Texas field-Houston trunk line.

War Restrictions Blamed For Big Illinois Slump

With oil production in Illinois running at 74,701,000 barrels for the first eight months of this year, a drop of 9,193,000 barrels from the same period last year, the state geological survey division reported that activities were reflecting wartime restrictions.

Other salient drilling data showing the effect of the war was given by the division.

Number of drilling permits from January 1 to September 1 this year totaled 1562, compared with 2949 in the same period last year.

Only 702 wells were successfully completed in that period this year, as against 1802 last year.

Markets • Statistics • Prices

Markets Generally Firm; Light Fuel Oil Strong

Strong demand for burning oil continues to highlight the market situation, as scarcity of that product in the East and Middle West appears a certainty during the coming winter.

Gasoline, in contrast, is not causing any trouble, as rationing in the East and prospective rationing over the nation make supplies well in line with requirements, if not generally excessive. The national inventory of that product is larger than that held at this time last year, and with general rationing ahead, surplus gasoline rather than a shortage anywhere is to be feared.

No special difficulty is being encountered, meanwhile, in meeting demand for heavy-fuel oils for industrial use, even in the East Coast district.

Eastern Deliveries

Primary interest is in light-fuel oils in the East Coast area, and deliveries to jobbers are comparatively large, following the period in which such deliveries were not permitted. Kerosine also is actively sought. Gasoline is generally reported in comparatively slack demand, and there is more interest in premium grades than in regular. Stocks of gasoline have improved materially in the district, in reflection of the curtailment of use.

The Gulf Coast refining district continues to suffer from the deficiency of transportation, encountering numerous inquiries from the East for light-fuel oils and kerosine but being unable to accept orders because of lack of tank cars for making shipments. Various refiners report that they continue to store products, in absence of market outlet.

In the Middle West, strong demand for heating oil is reported, as inquiries come in from the East, on top of those from within the district. However, tank cars are not available for handling all the potential orders, while refineries could not handle much more business even if the cars were provided, plant operations being generally close to capacity. Some decline of demand for automotive gasoline and oil is indicated, in reflection of light use of cars. Lower use of automotive oil is compensated, however, by increased use of that product for industrial purposes.

Markets for all products continue exceptionally strong in the Upper Mid-Continent, with limited producing ability of the district the predominant factor, although there is still some difficulty in obtaining tank cars promptly when needed. Oklahoma grade crude remains unavailable in the full quantities of potential demand, despite withdrawals from storage to supplement current production. Especially wanted are light fuel oils, which cannot be supplied in volumes desired. Some refiners are prorating their production on basis of past sales. Gasoline and other products also are readily absorbed as offered.

Western Pennsylvania refiners remain unable to help out much in supplying the East Coast district with heating oils and kerosine, as local demand fairly well absorbs all production possible. Lubricants remain in strong demand.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

ITEM	Crude Oil Prod. Bbls. Day (Add 000)	Crude Oil Prod. Week Ended	Runs to Stills Bbls. Day (Add 000)	Runs to Stills Week Ended	Crude Stocks Bbls. (Add 000)	Crude Stocks Week Ended	Gasoline Stocks Bbls. (Add 000)	Gasoline Stocks Week Ended	Gas Oil & Distillate Stocks Bbls. (Add 000)	Gas Oil & Distillate Stocks Week Ended	Residual Fuel Oil Stocks Bbls. (Add 000)	Residual Fuel Oil Stocks Week Ended
Highs:												
1939	3,910	8- 5	3,650	10-21	278,607	5-26	87,769	4-22	39,562	10-28	116,237	8-26
1940	3,890	3-16	3,690	6-22	265,865	8-31	102,817	4-20	49,051	10-19	109,135	9-14
1941	4,337	11-22	[4]4,120	10-18	266,187	3-29	99,727	3-29	[4]54,983	11-15	102,448	1- 4
1942	[4]4,337	2- 7	3,961	1- 3	263,208	3-28	[1]107,229	3-14	49,357	1- 3	95,857	1- 3
Lows:												
1939	[3]1,601	8-26	3,125	2-18	[2]229,127	10-21	71,152	10- 7	20,722	4-15	105,397	4- 8
1940	3,335	11-30	3,370	1- 6	237,339	1-27	79,847	11- 9	23,551	4- 6	102,344	2-10
1941	3,364	1-11	3,490	1-18	240,399	11-15	80,870	10- 4	28,381	4-12	90,914	7-12
1942	3,297	7- 4	3,393	5-23	244,364	1-10	80,356	9- 5	29,240	4-25	76,903	7- 4
Trends in 1942 (Week Ended):												
Jan. 3	4,038	.....	3,961	.....	244,440	.....	92,987	.....	49,357	.....	95,857	.....
Jan. 31	3,871	.....	3,848	.....	250,740	.....	97,810	.....	40,674	.....	91,189	.....
Feb. 28	4,016	.....	3,675	.....	259,373	.....	105,635	.....	34,547	.....	88,285	.....
Mar. 28	3,820	.....	3,667	.....	263,208	.....	105,624	.....	31,756	.....	83,045	.....
April 25	3,581	.....	3,506	.....	257,073	.....	102,897	.....	29,240	.....	81,107	.....
May 30	3,877	.....	3,522	.....	255,023	.....	95,355	.....	31,384	.....	79,628	.....
June 27	3,719	.....	3,581	.....	253,364	.....	88,396	.....	32,851	.....	77,304	.....
July 25	3,691	.....	3,658	.....	249,262	.....	82,281	.....	35,966	.....	77,816	.....
August 29	3,964	.....	3,697	.....	249,007	.....	80,831	.....	42,060	.....	78,034	.....
September 5	3,683	.....	3,656	.....	246,942	.....	80,356	.....	42,819	.....	78,267	.....
September 12	3,902	.....	3,710	.....	244,671	.....	81,758	.....	43,567	.....	78,633	.....
Sept. 19, 1942	**3,936**	.....	**3,713**	.....	.....	.....	**80,793**	.....	**44,442**	.....	**79,335**	.....
Sept. 20, 1941	4,074	.....	4,047	.....	[4]246,164	.....	79,195	.....	50,595	.....	93,919	.....
Change:												
In week	+34	.....	+3	.....	—2,271	.....	—965	.....	+875	.....	+702	.....
In year	—138	.....	—334	.....	—1,493	.....	+1,598	.....	—6,153	.....	—14,584	.....
In year	—3.3%	.....	—8.2%	.....	—0.6%	.....	+2.0%	.....	—12.1%	.....	—15.5%	.....

[1] All time peak. [2] Lowest since April, 1922. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent States. [4] Stocks, September 13, 1941.

Burning Oil Stocks Short; Surplus of Gasoline Held

Despite comparaitvely large crude oil production and refinery runs in the week ended September 19, there was continued difficulty in meeting demand for the principal petroleum products; and stocks of urgently needed burning oils were increased subnormally, in the face of a reduction of gasoline production that was intended to result in larger output of the light fuel oils. Some encouragement was offered, however, by the addition of 700,000 barrels of residual fuel oil to storage.

In maintaining refinery runs at current levels, however, the industry is drawing on storage of crude oil, the stocks of the raw material having been reduced over 2,000,000 barrels in each of the two weeks ended September 12 and 5, although production of crude in the September 12 week was only 3 percent lower than in the like week last year. Similarly, crude output in the week

Petroleum Production in the United States

(Estimates compiled by The Oil Weekly. All figures indicate daily averages, in barrels)

STATE OR DISTRICT	[1]OPC Allocation in September	PRODUCTION IN WEEK ENDED Sept. 19	PRODUCTION IN WEEK ENDED Sept. 26
Arkansas	81,930	72,450	73,400
California	79[illegible],600	748,300	730,900
Long Beach		35,300	35,600
Midway-Sunset		57,100	58,200
Kettleman Hills		41,100	39,200
Wilmington		97,200	94,800
Rest of State		517,600	503,100
Colorado	7,000	6,700	6,600
Illinois	289,200	253,950	260,850
Salem		37,800	38,300
Louden		47,700	46,750
Other New Pools		156,750	163,700
Old Pools		11,700	12,100
Indiana	19,300	17,350	16,700
Kansas	285,300	301,000	296,900
Kentucky	14,000	12,300	11,900
Louisiana	334,800	337,850	331,600
North Louisiana		97,250	99,800
South Louisiana		240,600	231,800
Michigan	66,700	65,900	62,850
Mississippi	50,200	73,650	74,250
Missouri		130	130
Montana	22,800	22,400	22,250
Nebraska	3,900	3,400	3,450
New Mexico	98,100	98,350	98,600
New York	15,200	13,500	13,300
Ohio	11,200	9,650	9,350
Oklahoma	415,300	370,100	368,550
Oklahoma City		69,650	68,100
Seminole Area		85,975	87,450
Rest of State		214,475	213,000
Pennsylvania	52,300	50,100	52,500
Tennessee		30	30
Texas	[2] ,397,800	1,380,150	1,383,900
Upper Gulf Coast		325,050	326,450
East Texas Field		362,650	362,550
Rest of Eastern Texas		86,100	86,650
Lower Gulf Coast		99,200	98,950
Southwest Texas		48,200	48,600
South Central Texas		17,850	18,050
West Texas		212,950	217,350
North Texas		137,050	140,200
Panhandle		91,100	85,100
Utah		15	15
West Virginia	16,600	9,700	10,300
Wyoming	93,400	90,500	89,100
Total United States	4,066,500	3,937,475	3,917,425

[1] Production rates recommended for states by Office of Petroleum Coordinator, on basis of Bureau of Mines forecast of the nation's daily average requirements for domestic crude during month. State conservation authorities except Texas Railroad Commission have prescribed allowables calculated to hold actual production within OPC regulations. (Details on state allowables published in The Oil Weekly of September 7, page 43.)

[2] In general, Texas fields will be shut down on September 5, 6, 12, 13, 19, 20, 26, 27 and 30, but the number varies in different fields.

ended September 19 was only 3 percent under a year previously, in averaging 3,936,000 barrels daily, that figure having been 138,000 barrels under the 4,074,000 barrels per day produced in the week ended September 20 last year.

Crude runs to stills in all plants of the United States averaged 3,713,000 barrels daily in the week ended September 19, up 3000 from the previous week, but 334,000 barrels or 8.2 percent under the runs of 4,047,000 barrels a day reported for the September 20 week last year. At the current level, the nation's plants are utilizing 77 percent of their capacity. Appalachian and Middle Western plants are operating around 97 percent of capacity, but Oklahoma-Kansas plants at only 88 percent and Rocky Mountains at 72 percent, while those of the East Coast and Southwestern districts now are using merely 65 percent of rated capacity, in processing a little under 1,600,000 barrels of crude daily. California refineries charged to stills practically 700,000 barrels daily in the week ended September 19 and were making use of over 85 percent of potential throughput.

Gasoline production was lowered about 23,000 barrels daily in the September 19 week for the nation as a whole, although the curtailment was concentrated in California, the Middle West, and the East Coast-Southwest districts, while there were increases in the Appalachian, Oklahoma-Kansas, and Rocky Mountain districts.

The national inventory of finished and unfinished gasoline was reduced 965,000 barrels between September 12 and September 19, having been brought down to 80,793,000 barrels. However, that amount was 1,598,000 barrels (2 percent) in excess of the 79,195,000 barrels held on September 20 last year, when demand for the product was much higher. The week's reduction reflected withdrawals in the East Coast, Southwestern, Middle Western, upper Mid-Continent, and Rocky Mountain districts, which were only partially offset by increases in the Appalachian region and California.

United States stocks of gas oil and distillate fuel were increased 875,000 barrels in the week of September 19, having been expanded to 44,442,000 barrels. But that quantity was 6,000,000 barrels (12 percent) less than the 50,595,000 on hand September 20 last year. The 875,000-barrel addition to stocks was far short of the increment of over 1,600,000 barrels in the corresponding week last year. The week's addition was accounted for largely by gains of 115,000 barrels in California and 713,000 in the East Coast-Southwest. Minor additions were made in the Appalachian, Oklahoma - Kansas, and Rocky Mountain districts, while a 47,000-barrel withdrawal occurred in the Middle West, apparently in reflection of shipments to the East.

Stocks of residual fuel oil in the whole country totaled 79,335,000 barrels on September 19, up 702,000 from a week previously, but 14,500,000 barrels or 15.5 percent down from a year before, when the total was 93,919,000 barrels. The increase of the week included 601,000 barrels added in California, where particularly needed, 160,000 in the Middle West, and 52,000 in the Appalachian district. There were withdrawals in the East Coast-Southwest, upper Mid-Continent, and Rocky Mountain districts.

Crude-oil stocks declined 2,271,000 barrels to a total of 244,671,000 in the week ended September 12, the Bureau of Mines reported. As recently as August 29, the crude inventory was 249,007,000 barrels. In the September 12 week, withdrawals included 558,000 barrels of Texas crudes, 535,000 of Oklahoma oils, 429,000 of Illinois-Indiana, 115,000 of Mississippi, 193,000 of Rocky Mountain, 602,000 of California, and 124,000 barrels of Pennsylvania grade oils. In the preceding week, also, there had been substantial crude withdrawals, including 411,000 barrels of Oklahoma grade, 576,000 of Illinois-Indiana crudes, 20,000 of Mississippi oil, 185,000 of Rocky Mountain, and 185,000 of California crudes. Noteworthy is the continued steady draft of Oklahoma and Illinois grade crudes from storage, while California also still is drawing on storage, despite stepping up of allowables every month lately.

Bureau Report Shows Slow-Down in July

The slowing down in development of new reserves continues to be a source of concern to officials of the Bureau of Mines, who pointed out September 21 that although the number of oil wells completed rose from 726 in June to 833 in July, the total initial production rose only from 195,000 to 197,500 barrels daily, the latter figure being only 28 percent of the initial reported in July, 1941.

The bureau's comment on the drilling record was made in its report on production in July, when the daily crude oil output declined to 3,605,900 barrels from 3,619,800 barrels in June and 3,815,000 barrels in July of last year.

A material gain in daily average was reported for California, but was nearly balanced by a decline in Texas, chiefly in the East Texas field. Louisiana production continued to gain, but Illinois continued to decline. Another record was established in Kansas with a daily average of 278,200 barrels compared with 271,400 barrels in June. Production in the other states was generally lower, with New Mexico the outstanding exception.

A substantial rise in crude runs to stills, together with the small decline in output, was reflected in an accelerated decline in crude stocks, which dropped at the rate of about 200,000 barrels daily, compared with 100,000 barrels in June, the report showed.

Daily average crude runs were 3,599,000 barrels which, while 86,000 barrels more than in June, was 310,000 barrels under last year. The only change in yields of any consequence was an increase of 0.8 percent to 38.6 percent, in the yield of gasoline.

Total demand for motor fuel in July was problematical. The apparent demand shown by the report was about 57,700,000 barrels, or 11 percent under the same month last year, but the decline in actual consumption was probably much larger as the advent of coupon rationing on July 22 must have stimulated the movement of gasoline into unreported storage. Stocks of gasoline at refineries and terminals showed an unusually large decline, even for July, the bureau said, more than 8,000,000 barrels being withdrawn, bringing the total for finished and unfinished down to 79,446,000 barrels at the close of the month.

Tabulations in the report showed that total crude oil production for the month was 111,782,000 barrels, against 108,595,000 barrels in June, with natural gasoline production of 6,804,000 barrels against 6,558,000 barrels.

At the close of the month crude stocks included 245,026,000 barrels of gasoline-bearing oil in the United States and 10,950,000 barrels of heavy in California; other stocks included 6,588,000 barrels of natural gasoline and 245,275,000 barrels of refined products, making a total, all oils, of 507,839,000 barrels. The corresponding total at the close of June was 515,132,000 barrels.

Bureau of Labor Statistics figures placed the price index for petroleum and products in July at 60.6 compared with 59.8 in June and 60.9 in July, 1941. The crude-oil capacity represented in the report was 4,598,000 barrels, a gain of 6000 barrels over June although the number of plants declined by five. The operating ratio was 78 percent in July, compared with 77 percent in June and 89 percent in July, 1941.

Committee Offers Two Plans For Corpus-Houston Line

J. A. Neath, chairman of a subcommittee appointed by the Transportation Committee of District No. 3 to study the need for an oil pipe line from Corpus Christi to the Houston-Beaumont area, has announced a report to the Transportation Committee of District No. 3, indicating two possible alternatives which might be used for delivering 60,000 to 75,000 barrels per day of crude oil and products from Corpus Christi to Houston. The alternatives proposed involve conversion of some gas lines and some new construction, for which it is anticipated that used pipe can probably be secured. The information was developed with the assistance of the Natural Gas Committee of District No. 3. The other members of the subcommittee are Harold Decker, Seaboard Oil Company, Corpus Christi; E. M. Smith, United Gas Corporation, Houston, and P. E. Hurley, Shell Oil Company, Houston.

The report by the subcommittee was prepared early in September and Neath states that the subcommittee has gone as far as it can in this study until a definite decision is reached as to whether Southwest Texas crude and products are required for delivery directly to the 24-inch pipe line from East Texas to Illinois, or the crude is required as replacement by Houston and Beaumont refineries for crude diverted to the 24-inch pipe line. Further progress on the project from Corpus Christi to Houston will be delayed pending determination of the material to be handled by the 24-inch pipe line, the study of which has been assigned by the Office of Petroleum Coordinator to the General Committees of Districts Nos. 1, 2, and 3. Neath has indicated that if the decisions relating to the supply for the 24-inch line result in requirement of Southwest Texas crude in the Houston-Beaumont area, it appears that physical arrangements could be made to deliver 60,000 to 75,000 barrels per day without much use of new steel. However, the subcommittee reports that it has not considered whether satisfactory financial arrangements could be made for this line.

U. S. Field Operations

Illinois Basin

New Pay Horizon For Boulder Field

New pay horizon added to Boulder field of Clinton County as Devonian well blows in. Testing south outpost to Dale field, Hamilton County. May set pipe to Aux Vases at Hamilton County outpost.

Clinton County: E. Frank Jones' Harrison 2, SE NW 2-2n-2w, Boulder field, blew in from Devonian lime with 20 ft of cement still in hole. Casing is at 2610 ft and total depth is 2640 ft. Only other productive horizon in the field is Benoist sand, which has yielded from 100- to 400-bbl wells from around 1250 feet.

Hamilton County: Tide Water Oil Co.'s Dennis 1, SE SE SE 27-6s-5e, southwest of the Rural Hill pool and northwest of a new pool recently opened by Ohio Oil Co., cored 5 ft of Aux Vases saturation between 3252-60 ft. If no saturation is found in McClosky the test probably will be plugged back to the Aux Vases.

Gulf's Neal 1, NW NE NW 8-6s-7e, pumped 211 bbls of oil and 20 bbls of water on the beam in 20 hours from Aux Vases sand at 3006-27 ft. The test is south of the Dale field.

Indiana

Posey County: Paul Rossi's P. Willmann 1, SE SE SE 18-6s-12w, north outpost to the Caborn field, was being given production test in Waltersburg sand at 1846-60 ft. Only gauge to date is 25 bbls of oil and 50 bbls of water a day, swabbing.

A mile south of Caborn field, John Lindas' Seifert 1, SW NW NE 30-6s-12w, was drilling at 1200 ft.

Southeast of the Griffin pool, 2½ miles west of Griffin, NW NW SW 3-4s-14w, Gulf farmout, pumped 10 bbls of oil an hour on beam from Aux Vases sand at 2810-20 ft. Hole was bottomed at 2824 ft. Same operators have started McCoy 2, a south offset to No. 1.

Warrick County: K. D. Holland's Bender 1, SW NW SE 35-4s-6w, wildcat, abandoned at 1301 ft. Starting at surface elevation of 394 ft, Ste. Genevieve series was topped at 1135 ft.

Vanderburgh County: Sells Petroleum's McCarthy Unit 1-A, SW NE NW 32-6s-11w, 2 miles southwest of Evansville, was installing pumping unit to test Waltersburg sand at 1737-45 ft.

Kentucky

Union County: Sun Oil Co.'s Highland Creek 1, NE NE NE 20-P-19, 4 miles from nearest production, was drilling at 2075 ft, after getting promising shows in the Waltersburg sand. Starting at surface elevation of 451 ft, Waltersburg showed 300 ft of oil and 175 ft of oil-cut mud on drill-stem test at 1800-33 ft. Hole then was deepened 25 ft, when second drill-stem test at 1800-58 ft showed 600 ft of oil, 300 ft of mud and 100 ft of salt water in 45 minutes.

Henderson County: Cherry and Kidd's Eubank 2, NW NW 40-acre tract 24-Q-21, set casing at 2294 ft to test promising saturation in the Cypress sand at 2300-13 ft.

Results on Industry's Prospecting Fronts

Wildcat operations last week resulted in finding 6 oil wells among 52 completions. So far this year 2307 wildcat completions have added 294 new oil wells.

Illinois: Extension indicated for three fields.

Kansas: Edge well at Peace Creek showing.

West Texas: Pecos County wildcat has showing in unidentified horizon.

North Texas: Wildcat discoveries pending in three counties.

East Texas: Salt water drowns hopes of Smackover production at Talco and interest shifts to Bowie County.

Southwest Texas: Deep Edwards Lime producer in Atascosa.

Gulf Coast: Louisiana side has new field. Lake Creek in Texas is extended.

ILLINOIS FIELD COMPLETIONS

Clay County: J. V. Dunbar's Liggett 1, ne nw se 17-5n-5e, AV 2322-2343 ft, 27 bbls, 2343 ft.

Clinton County: Murphy & Goldsmith's Goldsmith 2, sw ne nw 2-2n-2w, Bethel 1215-28 ft, 352 bbls, 1230 ft.

Edwards County: Magnolia's Brokaw 1, c nw nw 7-1s-11e, abnd 3292 ft.

Longhorn Oil Corp.'s Helm 36, sw se sw 22-2s-14w, McC 2880-85 ft and 2903-06 ft, 15 bbls, 2969 ft.

Effingham County: Ryan & Lockett's Reed 1, nw sw se 7-8n-4e, abnd 1530 ft.

Fayette County: H. Luttrell et al's C. Aukamp A-3, nw sw ne 31-5n-3e, Bethel 1896-1904 ft, 87 bbls, 1904 ft.

Franklin County: J. W. Menhall's Hill 1, ne se se 25-5s-1e, abnd 2849 ft.

Gallatin County: Carter's Vinyard 2, c se ne 21-7s-8e, AV 2914-58 ft, 9 bbls, 2962 ft.

B. M. Heath's Edwards 2, c nw nw 22-7s-8e, AV 2907-21 ft, 105 bbls, 2972 ft.

Hamilton County: Shell's Kern 1, nw nw sw 5-6s-7e, Bethel 2917-22 and 2930-53 ft, 37 bbls, 3059 ft.

Jasper County: Pure's Armistead Consol. 1, c sw sw 17-6n-10e, McC 2844-50 and 2877-82 ft, 525 bbls, 2885 ft.

Lawrence County: L. S. Heath's Bye 1, nw ne se 27-2n-12w, Biehl 1405-14 ft, 18 bbls, 1420 ft.

Madison County: M. D. Bryant et al's A. Schoeck 1, sw sw ne 27-3n-6w, Trenton 2322-2354 ft, 192 bbls, 2354 ft.

Sinclair-Wyoming's Ellis 1, sw ne sw 27-3n-6w, Trenton 2332-62 ft, 532 bbls, 2362 ft.

Richland County: Sinclair-Wyoming et al's All States 6, ne sw ne 22-2n-11w, Bethel 1746-73 ft, 20 bbls, 1773 ft.

Pure's Coen 28, c sw ne 9-3n-9e, Weller 2598-2602 ft, 107 bbls, 2660 ft.

Pure's McCormack 5, c nw ne 30-5n-10e, McC 2820-23 and 2832-37 ft, 121 bbls, 2865 ft.

Gulf's Berry 1, se nw ne 35-5n-10e, abnd 3106 ft.

Gulf's Sterchi 1, se ne nw 36-5n-10e, abnd 3132 ft.

Wabash County: Magnolia's Payne 2, c sw nw sw 9-1n-12w, Biehl 1489-1500 ft, 28 bbls, 1500 ft.

Wayne County: Jablonski & Duncan's Garrison 1, c e½ sw sw 35-1n-8e, AV 2973-98 ft, pb 2998 ft, 180 bbls, 3128 ft.

Pure's Blackburn A-1, c ne sw 35-1n-8e, abnd 3095 ft.

Pure's Reed 2, c ne nw 20-1s-6e, Rosi 3112-22 ft, 247 bbls, 3175 ft.

Pure's Kinney 1, c se sw 12-1s-7e, AV 3050-53 ft, 175 bbls, 3080 ft.

Pure's Pike 2, 150 ft ne cen ne ne 14-1s-7e, abnd 3273 ft.

New Penn Dev. Co.'s Boze Comm. 1, c w½ ne nw 28-2s-9e, abnd 3394 ft.

Texas Co.'s Mayberry-Land Comm. 1, c n½ ne ne 8-3s-6e, McC 3336-46 ft, 74 bbls, 3346 ft.

White County: Longhorn Oil Corp.'s Helm 33, se ne nw 27-3s-14w, AV 2755-78 ft, McC 2865-70 and 2908-10 ft, 150 bbls, 2945 ft.

Jarvis Bros. and Marcell's Cleveland 1, c

U. S. Drilling Operations in Week Ended September 26, 1942

STATE	ALL WELLS COMPLETED — THIS WEEK Total	Oil	Gas	Dry	*Miscel.	Total 1942	Total this Date 1941	‡WILDCATS COMPLETED — THIS WEEK Total	Oil	Gas	Dry	Distillate	Total 1942
Alabama	.....	....	....	....	....	3	2	....	....	....	....	....	3
Arizona	.....	....	....	....	....	2	....	....	....	....	....	....	2
Arkansas	2	1	....	1	....	99	123	1	....	....	1	....	14
California	9	6	....	3	....	546	840	3	....	....	3	....	87
Colorado	.....	....	....	....	....	10	14	....	....	....	....	....	....
Georgia	.....	....	....	....	....	2	1	....	....	....	....	....	2
Illinois	41	24	....	17	....	1,574	2,850	11	2	....	9	....	452
Indiana	4	2	....	1	1	287	401	2	1	....	1	....	72
Iowa	.....	....	....	....	....	....	5	....	....	....	....	....	....
Kansas	41	25	2	12	2	1,227	1,673	8	1	....	7	....	268
Kentucky	3	1	1	1	....	111	246	....	....	....	....	....	28
Louisiana	16	9	3	4	....	729	1,114	....	....	....	....	....	110
Michigan	11	4	....	7	....	507	613	3	....	....	3	....	132
Mississippi	2	1	....	1	....	88	140	1	....	....	1	....	28
Missouri	.....	....	....	....	....	21	59	....	....	....	....	....	....
Montana	.....	....	....	....	....	147	144	....	....	....	....	....	....
Nebraska	1	....	....	1	....	28	66	1	....	....	1	....	14
New Mexico	4	3	....	1	....	302	278	1	....	....	1	....	37
New York	29	16	....	....	13	935	729	....	....	....	....	....	1
Ohio	26	6	14	5	1	828	1,284	....	....	....	....	....	....
Oklahoma	30	15	1	9	5	1,086	1,638	3	....	....	3	....	219
Pennsylvania	38	32	6	....	....	2,728	2,981	....	....	....	....	....	....
Tennessee	.....	....	....	....	....	8	16	....	....	....	....	....	....
Texas	88	50	9	28	1	4,235	7,731	18	2	....	16	....	835
Utah	.....	....	....	....	....	....	2	....	....	....	....	....	....
Virginia	.....	....	....	....	....	1	....	....	....	....	....	....	....
West Virginia	18	1	11	3	3	560	523	....	....	....	....	....	....
Wyoming	.....	....	....	....	....	73	102	....	....	....	....	....	3
Total this week	363	196	47	94	26	16,137	23,575	52	6	....	46	....	2,307
Total last week	359	195	39	102	23	15,774	22,930	57	7	....	49	1	2,255
Total this year	16,137	8,506	1,381	4,222	2,028	.....	.....	2,307	294	34	1,972	7	.....

* Includes old wells deepened, water intake, gas input, salt water disposal, and distillate wells.
‡ OPC program calls for 4,000 wildcats in 1942, of which 624 should produce oil and 116 gas, leaving 3,260 dry.

n½ se se 36-4s-10e, Tar Spgs 2283-97 ft, 130 bbls, 2297 ft.

McElvain Bros. et al's Poole-Parr 6-C, nw sw ne 13-6s-10e, Tar Spgs 2191-2202 ft, 192 bbls, 2856 ft.

ILLINOIS WILDCAT COMPLETIONS

Clark County—Failure: Wallace Wright's Finney 1, c w½ sw nw 32-9n-14w, abnd 1563 ft.

Clay County—Failure: Sinclair-Wyoming's Rose 1, sw ne ne 12-2n-5e, abnd 3113 ft.

Gallatin County—Failure: N. V. Duncan's S. S. Knight 1, ne ne nw 22-7s-9e, abnd 3082 ft.

Hamilton County—Failure: Magnolia's S. Moore 1, sw ne ne 33-5s-5e, abnd 3430 ft.

Sun's Swank-White Unit 1, c e½ se sw 30-5s-6e, abnd 3516 ft.

Delta Prod. Co.'s Allen et al 1, c e½ ne nw 17-5s-7e, abnd 3505 ft.

Jefferson County — Failure: H. H. Wegener's Grant Unit 1, c w½ nw se 35-2s-2e, abnd 2904 ft.

Jersey County — Failure: Gail Moulton's Lamb Unit 1, ne ne sw 26-8n-13w, abnd 2482 ft.

Madison County—Failure: Gulf's I. Stewart 1, nw ne ne 21-4n-8w, abnd 2136 ft.

Marion County—New Field: Braniger & Powers' Hatfield 1, c sw se 28-1n-2e, Rosi 2101-09 ft, 31 bbls, 2109 ft.

Marion County—Failure: Texas Co.'s Conant 1, nw nw se 25-4n-2e, abnd 2296 ft.

Wayne County—New Field: Pure's S. S. Allen 1, c se se 11-1s-8e, Rosi 3065-73 ft, 9 bbls, 3215 ft.

ILLINOIS WILDCAT STARTS

Christian County: William Marlow et al's Charles Ralph 1, c s½ ne ne 27-15n-2w, dr.

Edwards County: Stanolind's Broster 1, se se ne 7-2s-10e, dr.

Effingham County: Papoose Oil Co.'s Yinst 1, nw ne sw 12-6n-4e, lcn.

Nash, Redwine et al's Lloyd Kinsey Comm. 1, c sw sw 7-8n-4e, dr.

Franklin County: Thompson & Vitsch's Davis 1, se ne se 32-6s-1e, dr.

Gallatin County: Cherry & Kidd's Kerwin 1, ne ne sw 11-8s-10e, dr.

Hamilton County: Texas Co.'s Irvin 2, se ne sw 12-6s-6e, lcn.

Pure's Phillips A-2, se nw nw 6-6s-7e, lcn.

Lawrence County: E. O. Olds' Van Wey 1, c se ne 23-2n-12w, lcn.

Madison County: J. Lee's Albert 1, ne ne ne 11-5n-6w, lcn.

Marion County: Ohio's Jones 1, c e½ e½ se 21-4n-4e, lcn.

Perry County: Texas Co.'s Leich 1, se se nw 14-4s-4w, lcn.

St. Clair County: Mid Sun Oil Corp.'s Schneppe Comm. 1, c sw ne 5-1n-8w, lcn.

Washington County: I. M. Conray et al's Liebrock 1, sw sw nw 21-2s-3w, lcn.

Wayne County: Texas Co.'s Garner 1, c w½ ne nw 6-2s-6e, lcn.

White County: Pure's Ryle B-1, nw se se 18-6s-9e, drlg.

INDIANA WILDCAT STARTS

Dubois County: H. C. Detrick et al's Valentine Fleig 2, c ne se 9-3s-4w, dr.

Gibson County: Carroll Oil Co.'s Crecelius 2, nw nw se 36-1s-10w, lcn.

Porter County: Elmer Hostetter's Goodposter 1, nw se se 10-32n-5w, lcn.

Posey County: Cherry & Kidd's Koch-Husband Comm. 1, se sw sw 8-7s-14w, lcn.

INDIANA WILDCAT COMPLETIONS

Gibson County—Failure: R. D. Brown, Inc.'s R. H. Mahan 1, sw nw sw 36-1s-10w.

Posey County—Failure: Calstar Pet. Co.'s Perry Shoultz 1, ne ne sw 12-5s-14w, abnd 3075 ft.

Spencer County—New Field: Chas. Leeper et al's Kennedy 1, ne nw nw 34-6s-5w, AV 980-93 ft, 130 bbls, 994 ft.

INDIANA FIELD COMPLETIONS

Sullivan County: Ohio Oil Co.'s C. M. Walters B-1, c sw se 3-8n-10w, Dev 2381-2407 ft, 16 bbls, 2407 ft.

INDIANA OLD WELL DEEPENED

Hamilton County: Hamilton's Melson 1-A, ne sw sw 13-19n-3e, otd 1056 ft, abnd 1550 ft.

KENTUCKY FIELD COMPLETIONS

Daviess County: J. C. Ellis et al's Cooper 5, 2-N-31, Bethel 985-88, 1326 gas, 988 ft.

Render, Tr. & Basin Drlg.'s E. Allgood 1, 25-P-27, McC 2044-47 and 2069-72 ft, 311 bbls, 2072 ft.

Henderson County: Sinclair-Prairie's Cooper 1, 24-Q-21, abnd 2772 ft.

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EXPORT OFFICE: 50 CHURCH STREET, NEW YORK CITY

Oklahoma

Stake West Offset To Ingalls Producer

Ingalls area draws another location. Hughes County test going deeper after failing to show. Discovery in Marshall goes on pump.

Payne County: Simon Lebow's Jones 1, NEc SW SW 12-19-4e, is a west offset to new Misener production in the Ingalls area. Olinghouse completed an edge test for production from this sand in July, at 3798-3818 ft. Jones 1 is scheduled for same depth.

Logan County: Through municipal decision, future drilling in the newly proven Guthrie townsite area, where Sunray Oil Co.'s Welch 1, C NW SE 7-16-2w, is shut in after proving Simpson sands productive, will be on a 40-acre basis instead of on a plot or city lot basis as some had anticipated.

Huges County: Barnsdall's Mount 1, NEc 2-8-8e, wildcat, picked good shows in Viola lime at 4244-4268 ft, but on test failed to show commercially and is deepening. In case deeper zones fail to show additional testing of passed shows is in prospect.

Marshall County: Godfrey-Neff 1, NE NE SW 13-6s-6e, a temporarily abandoned wildcat taken over by H. F. Potts from the original owner, has had show acidized and well is on pump making 108 barrels daily from 3180-3260 ft.

OKLAHOMA FIELD COMPLETIONS

Caddo County—Apache: Amerada's Hunter 2, ne sw se 34-6n-12w, Bromide 3648 ft, pay 3670 ft, flow 198 bbls, 3961 ft.

Texas Co.'s Smith 3, ne nw ne 3-5n-12w, Bromide 3738 ft, flow 157 bbls hr, 1-in, 3940 ft.

Texas Co.'s Yellowfish 1, sw ne sw 20-5n-11w, Bromide 3196 ft, abnd 5235 ft.

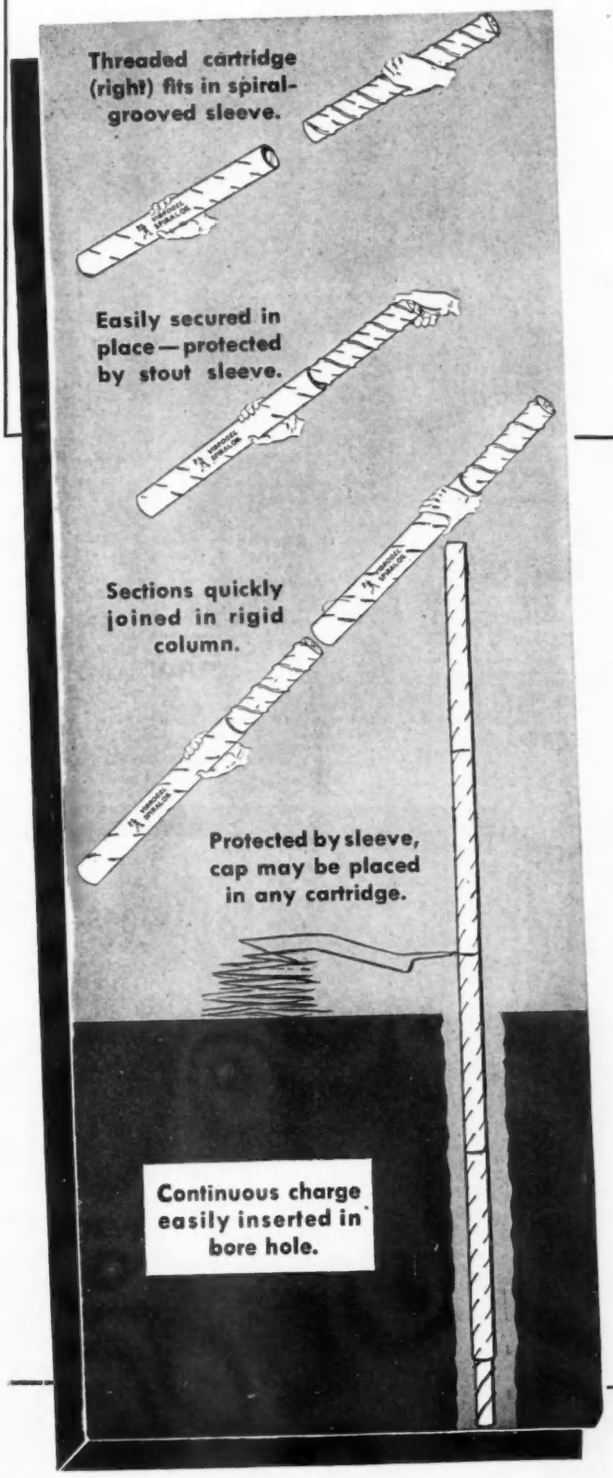
Creek County—Glenn: Gulf's Berryhill 41, nw ne ne 17-17n-12e, Glenn 1486 ft, shot 260 qts 1555-1645 ft, pump 25 bbls oil, 17 wtr, 1651 ft.

Creek County—Slick: W. J. Young's Mills 1, ne ne nw 8-14n-10e, Misener 3319 ft, abnd 3326 ft.

Lincoln County—Chandler: Stanolind et al's R. Cragg 2, se ne nw 12-14n-3e, otd 5015 ft,

New Invention aids Seismic Blasters

SPIRALOK


Threaded cartridge (right) fits in spiral-grooved sleeve.
Easily secured in place—protected by stout sleeve.
Sections quickly joined in rigid column.
Protected by sleeve, cap may be placed in any cartridge.
Continuous charge easily inserted in bore hole.

Geophysical crews have welcomed Spiralok with enthusiasm. It gives them a quick, easy way to join dynamite cartridges in continuous, rigid columns. This assures unbroken charges.

How this works is illustrated in the diagrams at the left. Note how the threaded cartridges screw into stiff, paperboard sleeves bringing their ends into close contact.

Another important feature which you will note is the extra protection Spiralok gives the blasting cap. This may be inserted near the center of any cartridge. The wires are led out at the joint between two sleeves. Thus the cap has extra protection against abrasion during loading.

Hercules Vibrogels* are now available in the new Spiralok shell. Ask the Hercules man about it.

*Reg. U. S. Pat. Off.

HERCULES POWDER COMPANY
INCORPORATED

935 KING STREET • WILMINGTON • DELAWARE

N-24

pb 4965 ft, shot 40 qts 4951-62 ft, pump 16 bbls oil, 254 wtr, 4965 ft.

Logan County—Crescent: Continental's Fergerson 4, sw se se 27-17n-4w, Layton 4938 ft, flow 460 bbls, 4990 ft.

Gulf's Good 2, c se nw 27-17n-4w, Layton 4920 ft, shot 30 qts 4929-72 ft, flow 136 bbls, 4974 ft.

Marshall County—Isom Springs: Gill & Morris' Adams 2, se nw se 31-7s-6e, sd 486 ft, pump 15 bbls, 494 ft.

Noble County—E. Lucien: Danciger O. & G.'s Chadwell 1, c sw nw 4-20n-2w, Wilcox 5356 ft, flow 25 bbls hr, 5379 ft.

Okfuskee County—N. Olympic: Foundation's Berryman 1, c se ne 1-10n-8e, Cromwell 3416 ft, 38 gas, 3451 ft.

Okfuskee County—Gypsy Hill: Okla. Oil Corp.'s Mitchell 8, nw sw nw 6-12n-12e, Dutcher 2487 ft, shot 20 qts 2520-40 ft, shot 35 qts 2520-50 ft, pump 18 bbls oil, 30 wtr, 2560 ft.

Osage County—Un-named: Norbla & Peters Pet.'s Osage 1, nw ne nw 9-24n-6e, Miss 2863 ft, abnd 2915 ft.

Osage County—Kasishke: Midco's Osage 1, nw ne se 19-24n-8e, Arb 2876 ft, abnd 2923 ft.

Pottawatomie County — Brookville: Cities Service's Cobb B-1, c se ne 4-8n-3e, Hunton 4820 ft, perf 4820-35 ft & 4830-43 ft, 4000 gals acid, pump 129 bbls, 56 wtr, 4885 ft.

Pottawatomie County—Macomb: Atlantic's Henderson 1, c se nw 27-8n-3e, Viola 4891 ft, perf 4710-90 ft, shot 50 qts 4700-50 ft, 8500 gals acid, swab 2½ bbls salt wtr per hr, abnd 4925 ft.

Pottawatomie County—E. Tecumseh: Ohio's Elby-Long 1, c ne ne 20-9n-4e, Wilcox 4699 ft, perf 4565-90 ft, Viola lime 4548 ft, 4000 gals acid, pump 70 bbls oil, 70 wtr, 4710 ft.

Pottawatomie County—W. Hotulke: Wood Oil Co.'s Webber 2, nw sw nw 26-9n-4e, Wilcox 4458 ft, abnd 4470 ft.

Atlantic's Pack 1, sw nw sw 27-9n-4e, Viola 4423 ft, 2nd Wilcox 4681 ft, perf 4430-50 ft, 6000 gals acid, pump 24 bbls, 4681 ft.

Ohio's Keifer 1, c ne se 28-9n-4e, Viola 4417 ft, Wilcox 4552 ft, pb 4470 ft, perf 24 shots 4415-23 ft, 3000 gals acid, pump 175 bbls oil, 75 wtr, 4558 ft.

Pottawatomie County—W. Earlsboro: Anderson-Prichard's White 4, c se nw 30-9n-5e, Hunton 4147 ft, 3000 gals acid, flow 310 bbls oil, 4155 ft.

Stephens County—West Loco: J. E. Jackson's Lowery 1, nw se nw 8-3s-5w, sand 1050-65 ft, sand 1135-50 ft, sand 1170-90 ft, perf 422-46 ft & 1050-65 ft, pump 27 bbls, 1190 ft.

OKLAHOMA OLD WELLS DEEPENED

Caddo County—Apache: Texas Co.'s Smith 6, sw nw nw 2-5n-12w, otd 3570 ft, flow 162 bbls hr, 3699 ft.

Creek County—Cushing: Tholocco's Fee 25, se se nw 9-18n-7e, otd 2464 ft, pb to 2705 ft, pump 8 bbls, 2714 ft.

Okfuskee County—Olympic: Moran's Lehman B-1, ne sw nw 18-10n-9e, otd 1897 ft, pump 14 bbls, 1910 ft.

Oklahoma Oil Corp.'s Ott, 1, sw nw nw 19-10n-9e, otd 1895 ft, shot 20 qts 1947-67 ft, pump 19 bbls oil, 70 wtr, 1967 ft.

Oklahoma County—Oklahoma City: Mid-Continent's Francis 1, c se sw 22-12n-3w, otd 6515 ft, shot 140 qts 6506-27 ft, pump 325 bbls, 6527 ft.

OKLAHOMA WILDCAT COMPLETIONS

Caddo County—Failure: Texas Co.'s Mah-Vo-Chu-Ky 1, c sw ne sw 20-5n-11w, Syl 1831 ft, Syl dolo 1973 ft, Viola 2124 ft, Simp 2993 ft, green shale 3116 ft, tite sd 3198 ft, soft sd 3221 ft, Joines 4847 ft, Arb 5176 ft, abnd 5235 ft.

Murray County—Failure: Rogers Bros.' Vanderslice 1, nw nw se 25-2n-2e, lost tools, abnd 2590 ft.

Tillman County—Failure: Tysen & Pierson's Billups 1, sw ne nw 1-4s-17w, abnd 1865 ft.

OKLAHOMA WILDCAT STARTS

Carter County: Lloyd Noble et al's Joliff 1-A, ne nw nw 24-5s-1e, lcn.

Comanche County: Texas Co.'s B. S. Thomas 1, nw ne se 20-4n-10w, dk.

Kansas

Edge Well Showing Oil at Peace Creek

Peace Creek edge well showing; Leon and Keighley connecting well is staked. Two wildcat stakes in Cowley County. New chat field in McPherson.

Reno County: Barnsdall's Blasdel, SW SW NW 13-23-10w, on the edge of Peace Creek production, has had a partial fillup of crude from Viola lime at 3746-54 ft, and is now testing.

Butler County: J. J. Lynch et al's Vandenburg 1, SW SE NW 35-27-6e, is an attempt to join Keighley and Leon fields with the production at Knox. Bartlesville, Wayside, Mississippi and the Arbuckle are main prospective horizons.

Cowley County: Wolf Creek Oil Co. has spudded Hawley 1, CSW SE 9-35-4e, north of Pudden on the state line.

Cities Service Oil Co.'s Stout 1, NW NE NE 9-31-6e, is a wildcat try east of the old Eastman field and north of a failure limiting production of the Burden area.

McPherson County: A new Mississippi chat field has been opened at Westgate-Greenland Oil Co.'s Crowther 1, C NW NW 26-17-1w, in the Lindsborg area, when the well flowed 151 bbls from chat at 2796 ft. Testing is continuing.

KANSAS FIELD COMPLETIONS

Barton County—Kraft-Prusa: Ramsey Pet.'s O. Soeken 1, c sw sw 22-17s-11w, Lans 3075 ft, Arb 3266 ft, pb 3180 ft, perf 3160-70 ft, 7500 gals acid, pump 996 bbls, 3338 ft.

Skelly's Heller 1, ne ne se 22-17s-11w, Arb 3280 ft, 1815 bbls, 3294 ft.

Skelly's Soeken 1, ne ne sw 22-17s-11w, Arb 3270 ft, 4750 gals acid, pump 156 bbls, 3286 ft.

Cowley County—Deichman: Trees Oil Co.'s Miller 1, se se ne 23-31s-4e, Bart 2860-2962 ft, shot 170 qts 2866-2963 ft, pump 143 bbls, 2963 ft.

Cowley County — Frog Hollow: Carter's Brothers 1, ne se sw 17-32s-5e, Bart 3020 ft, pump 158 bbls, 3027 ft.

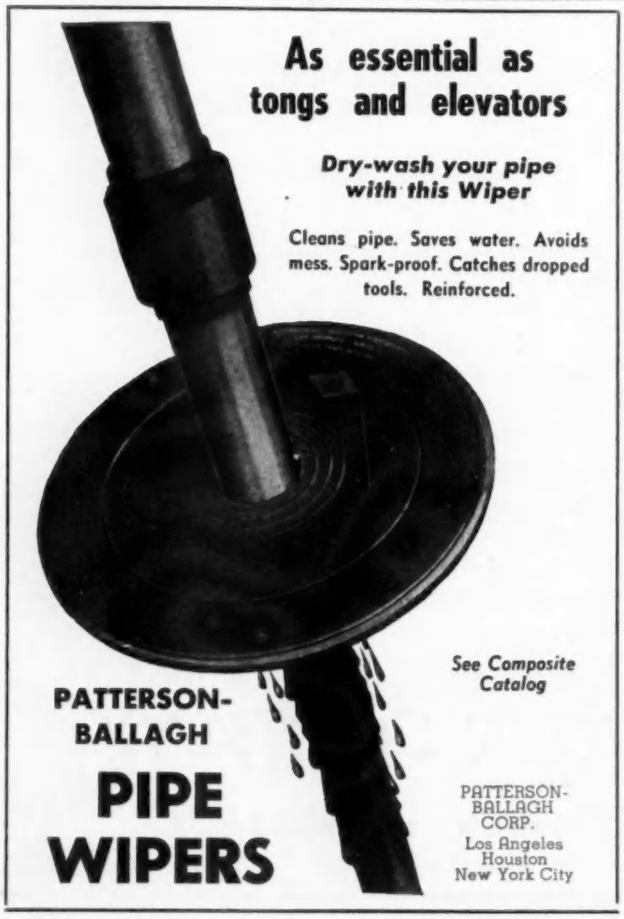
Ellis County — Bemis: Champlin's Hadley B-5, c e½ sw sw 29-11s-17w, Arb 3505 ft, pump 109 bbls, 3528 ft.

Ellis County—Burnett: Lario's Marshall E-1, ne se ne 24-11s-18w, Arb 3378 ft, perf 3378-3425 ft, 4500 gals acid, 500 gals butane, 15 bbls, 3470 ft.

Ellsworth County — Stoltenberg: Vicker's Kralik 1, c ne sw 8-16s-10w, Arb 3298 ft, 500 gals acid, 3000 bbls, 3313 ft.

Greenwood County—Virgil: Aikman & Braden's Fleming 1, c nw ne 15-24s-12e, Arb 2181 ft, abnd 2200 ft.

Greenwood County—Climax: Ozenberger's



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NOWERY J. SMITH SUPPLY CO.
HOUSTON, TEXAS

Ruch 1, c nw ne 9-27s-11e, Kansas City lime 940 ft, 681,000 gas, 959 ft.

Haskell County — Hugoton: United Prod's Frank Roy 1, ne ne sw 29-29s-34w, 16,459,000 gas, 2748 ft.

McPherson County—Henne: H. & M. Oil's Henne 1, c nw se 21-17s-1w, Miss 2662 ft, 910 bbls, 2672 ft.

McPherson County—Lindsborg: M. &. L. Oil Co.'s Gusthaston 2, c ne sw 7-17s-3w, Viola 3390 ft, 5000 gals acid, pump 794 bbls, 3392 ft.

Auto Ordnance's Sandal 1, c w½ se ne 8-17s-3w, Simp 3449 ft, 2312 bbls, 3457 ft.

Carter's Fornberg 1, c w½ ne sw 18-17s-3w, Viola 3367 ft, 7000 gals acid, pump 414 bbls, 3369 ft.

Carter's Fornberg 2, c w½ se sw 18-17s-3w, Viola 3362 ft, 6500 gals acid, pump 277 bbls, 3367 ft.

Carter's Rasmusson 1, c w½ nw se 18-17s-3w, Viola 3357 ft, 4000 gals acid, pump 590 bbls, 3361 ft.

M. & L. Oil Co.'s Baker 1, c w½ sw se 18-17s-3w, Viola 3356 ft, pb 3360 ft, 3500 gals acid, 1000 gals butane, pump 159 bbls, 3362 ft.

Phillips County—Dayton: Carter's Schultz 2, c ne se 26-2s-19w, Lans lime 3217 ft, rip csg, 6000 gals acid, pump 150 bbls oil, 100 wtr, 3413 ft.

Reno County—Hendrickson: Cities Service's Keesling 3, c ne sw 1-23s-10w, Viola 3711 ft, 3000 bbls, 3717 ft.

Reno County—N. E. Peace Creek: Cities Service's Heylmum B-4, sw ne nw 12-23s-10w, Viola 3743 ft, 500 gals acid, 3000 bbls, 3751 ft.

Rice County—Orth: Transwestern et al's Schultz 1, c w½ se nw 22-18s-10w, Arb 3229 ft, 2000 gals acid, pump 261 bbls, 3254 ft.

Rice County—Smyres: Shade & Berry's Anderson 1, c ne sw 25-19s-6w, Miss chat 3366 ft, 3000 bbls, 3396 ft.

Continental's John 3, ne nw nw 36-19s-6w, Miss chat 3292 ft, shot 50 qts 3305-21 ft, pump 420 bbls, 3334 ft.

Rice County—Chase: Bishop Oil Co.s' Reece B-1, c sw ne 22-19s-9w, Lans 2876 ft, pb 3175 ft, perf, 4000 gals acid, pump 166 bbls oil 30% wtr, 3251 ft.

Rice County—Kessling: Cities Service's Dick B-2, c sw sw 9-20s-9w, Arb 3254 ft, 1500 gals acid, pump 569 bbls, 3275 ft.

Rooks County—Webster: W. L. Hartman's Silvers 1, c s½ sw ne 21-8s-19w, Arb 3483 ft, abnd 3492 ft.

Rooks County — Erway: Cities Service's Grossbeck 1, c s½ se sw 1-10s-16w, Lans 3103 ft, abnd 3359 ft.

Russell County—Trapp: Pryor & Lockhart's E. Boxberger C-1, c s½ sw nw 10-15s-14w, Arb 3245 ft, pump 186 bbls, 3258 ft.

Hartman & Blair's Dietz 2, c s½ se nw 22-15s-14w, Arb 3355 ft, abnd 3382 ft.

Stafford County—Kipps: Skelly's Toland 1, c s½ ne nw 27-25s-14w, Lans 3712 ft, abnd 3906 ft.

KANSAS OLD WELLS DEEPENED

Russell County—Fairport: N. Appleman's Dodge 4, ne nw sw 32-11s-15w, otd 2910 ft, sandy congl 3144 ft, perf csg, 1500 gals acid, pump 120 bbls, 3189 ft.

N. Appleman's Oswald A-4, sw ne sw 8-12s-15w, otd 3043 ft, Arb 3235 ft, abnd 3245 ft.

KANSAS WILDCAT COMPLETIONS

Butler County—Failure: Rex & Morris' Farha 1, se ne se 5-29s-6e, Lans 1770 ft, Kansas City 2155 ft, Base Kansas City 2320 ft, Bart 2770-97 ft, hfw, Miss 2810 ft, abnd 2900 ft.

Greenwood County—Failure: A. H. Ponath's Defever 1, c se sw 9-28s-13e, Bart 1230 ft, abnd 1264 ft.

Jefferson County—Failure: Magnolia's Burns 1, se ne nw 33-11s-20e, B'ville 1424-43 ft, Miss 1422 ft, B. Miss 1775 ft, Hunton 1816 ft, sd 1903-15 ft, Viola 1925 ft, Wx 2060 ft, Arb 2130 ft, abnd 2167 ft.

Kiowa County—Failure: Herndon Drlg.'s Dowell 1, nw nw ne 23-28s-16w, Lans 4163 ft, Cherty Congl 4663 ft, Viola 4793 ft, Simp 4880 ft, Arb 4994 ft, abnd 5025 ft.

Marion County—Failure: F. A. Gillespie and Houser's Pritz 1, se se sw 29-18s-5e, Lans 1750 ft, Chatta 2353-68 ft, Miss 2252-68 ft, Kink 2325 ft, Hunton 2460-72 ft, Viola 2545 ft, Simp 2634 ft, Arb 2707 ft, abnd 2808 ft.

Rooks County—New Field: Cities Service's Dorr 1, ne nw ne 20-9s-16w, Lans 3145 ft, Arb 3474-3504 ft, perf 3243-57 ft, 3188-99 ft, ns, perf 3195-99 ft, perf 3200-05 ft, squeeze 3243-57 ft, 141 bbls oil, 27 wtr, 3504 ft.

Rush County—Failure: Atlantic and Derby's Holtzmier 1, sw nw se 12-16s-17w, Anhy 1105 ft, Congl 3541 ft, Arb 3567 ft, abnd 3613 ft.

Stafford County—Failure: Auto Ordnance Corp.'s Thole 1, sw sw sw 11-23s-12w, Topeka 2875 ft, Lans 3358 ft, Base KC 3590 ft, Cherty Congl 3629 ft, Viola 3729 ft, Simp shale 3734 ft, Simp 3778 ft, Arb 3788 ft, abnd 3181 ft.

KANSAS WILDCAT START

Jefferson County: McLaughlin's White 1, c ne se 8-11s-20e, rum.

NEBRASKA WILDCAT COMPLETION

Seward County—Failure: Neb.-Wyo. Oil's Denison 1, sw sw sw 11-12n-11w, Topeka 2165 ft, Lans 3494 ft, Marmaton 2785 ft, Base Permian 1785 ft, Topeka 2148 ft, Lans 2470 ft, Marmaton 2785 ft, Cherokee 2895 ft, Miss 3085 ft, Hunton 3165 ft, Viola 3347 ft, Simp 3394 ft, St. Peter 3453 ft, Arb 3494 ft, abnd 3500 ft.

West Texas

Pecos County Wildcat Testing Unidentified Zone

Pecos County wildcat near Delaware-Permian contact to make completion try in unidentified 6500-ft zone. Deep discovery in Gaines County increases oil yield.

Pecos County: Magnolia's Robertson 1, situated on 12,000-acre block, centering 13 miles north by west of Fort Stockton, is running 7-in to test promising gas shows from unidentified sand between Permian and Ordovician at 6510-61 ft. It is on the east rim of the Delaware Basin, involving north-south trend of unusual geological conditions for the county with possibilities of the Pennsylvanian, Devonian and Silurian being encountered. Plymouth's Levy 1, 12 miles north by east, logged 403 ft of Devonian before quitting at 6473 ft in hard chert. Robertson 1 yielded gas-cut mud on drill-stem test at 6477-6530 ft and at 6525-40 ft, elevation 2685 ft. Phillips Petroleum Co.'s Price 1, projected 8500-ft test on 20,000-acre block, centering 20 miles southeast of Fort Stockton, was drilling lime at 3660 ft.

Gaines County: The Texas Co.'s Robertson 1, 2½ miles northwest of Kirk pool, boosted its oil yield after retreating with 6000 gallons of acid through perforations at 5910-50 ft in Holt zone, and swabbed 206 bbls of 30-gr oil, including 3 percent bs&w, on 24-hour test. This wildcat is rated as a commercial pumper, and will likely encourage more prospecting in the area, although it proved dry in the Clear Fork in drilling to 7686 ft. Shell's Leaverton 1, 3½ miles southwest of Wasson field, resumed coring on 7500-ft Clear Fork contract, after testing dry at 4920-73 ft in San Andres, topped at 4490 ft, elevation 3590 ft.

Andrews County: Atlantic et al's University-Texu 1-A, deepest active wildcat in the district, was drilling shale and lime at 9790 ft, having logged mostly cherty-lime since entering Upper Ordovician at 9550 ft. Stanolind's University 1-W, mile north by west of Ellenburger production in the Embar pool, was drilling shale and lime at 8320 ft in Simpson, topped at 7850 ft, being 149 ft low. Tester used in Simpson at 7851-75 ft yielded salt water. Phillips Petroleum Co.'s University-Andrews 12, ⅝-mile northwest of nearest deep producer, was drilling dry Simpson at 8110 ft, and is also considered too low to produce from Ellenburger.

Wildcats: Skelly Oil Co.'s Richardson 1, southeastern Crane County Ordovician prospect and 7 miles north by west of Wentz pool, remained idle at 5064 ft, elevation 2341 ft. perfecting titles on the strength of shows encountered in unidentified formation. In Scurry County, Humble's Newman 1, 10 miles northwest of Snyder, was drilling middle Permian at 5470 ft, based San Angelo 2750 ft, elevation 2501 ft.

NEW MEXICO FIELD COMPLETIONS

Eddy County: Flynn-Welch-Yates' Grier 1, 1980 ft fr s and 1682 ft fr w 31-16s-31e, flow 85 bbls, 2-in, shot 60 qts 3000-98 ft, td 3170 ft.

Premier Pet. Corp.'s Arnold 1-C, c nw ne 26-17s-30e, flow 722 bbls ¾-in, shot 120 qts, 3182-3214 ft.

Skelly's Dow 2-B, c nw ne 21-17s-31e, flow 83 bbls, 7/32-in, acid 4000 gals, 3148-3588 ft.

NEW MEXICO WILDCAT COMPLETION

McKinley County—Failure: Cecil S. Ringle et al's U. S. Gov. 1, 1624 ft fr n and 2355 ft fr e lines 30-20n-9w, abnd 800 ft.

NEW MEXICO WILDCAT START

Eddy County: Premier Pet. Corp.'s Mrs. L. C. Stabelin 1, c nw ne 15-16s-30e, lcn.

WEST TEXAS COMPLETIONS

Andrews County—West Andrews: Kewanee Oil Co.'s University-Giles 1, c nw ne sec 12, blk 11, flow 464 bbls 2-in, shot 660 qts 4300-4420 ft, td 4435 ft.

Phillips' University-Andrews 15, c se sw sec 1, blk 11, flow 199 bbls, 2-in, 4000 gals acid and 3032 gals kerosene, 4211-4355 ft.

Andrews County—Fullerton: Fullerton Oil Co.'s Wilson 1-B, c ne ne PSL 20, blk A-37, flow 909 bbls, 1-in, acid 23,000 gals Clear Fork 6873-7300 ft.

Cochran County — Slaughter: Magnolia's Mallet 10-C, 580 ft out nwc lab 6, leag 51, Scurry CSL, flow 1182 bbls cas, acid 10,500 gals 5024-68 ft.

Continental's Dean 8, 1951 ft from s and 2008 ft from e lines 1600-ac lse, leag 58, Martin CSL, flow 1209 bbls, 3-in, acid 12,000 gals 4945-97 ft.

Crockett County—World-Powell: M. & M. Prod. Co.'s Powell 12-B, 1203 ft from s and 2310 ft from w lines EL 62, blk BB, pump 109 bbls, plus 6 percent water, 2601-10 ft.

Gaines County—Cedar Lake: Geo. P. Livermore's Jones-Humble 3, c se sw PSL 2, blk C-30, swab 458 bbls, 4680-4780 ft.

Hockley County—Slaughter: Devonian Oil Co.'s Hudgens 5, PSL 8, blk X, flow 1590 bbls cas, acid 11,800 gals 4978-5035 ft.

Geo. P. Livermore's Glimp 6, 495 ft from n and 509 ft from w lines s½ PSL 8, blk X, flow 1732 bbls cas, acid 10,000 gals 5005-33 ft.

Western States Gasoline Corp.'s Mallet 17-B, swc lab 25, leag 49, Scurry CSL, flow 1098 bbls cas, acid 12,500 gals 4985-5047 ft.

Howard County: Mid-Continent's Denman 5-B, 2309 ft from w and 997 ft from s lines T&P 16, blk 30, T-1-S, pump 146 bbls, shot 500 qts 2670-2870 ft, td 2880 ft.

Mitchell County—Northwest: F. W. Merrick's Strain 4-A, 2298 ft from s and 1763 ft from e lines H&TC 64, blk 97, pump 99 bbls, shot 730 qts, 1585-1752 ft.

Pecos County—Abell: Stanolind's Rathjen 2, c lot 15, H&GN 26, blk 9, elev 2375 ft, flow 188 bbls, 5/16-in, acid 3000 gals Permian perf 3930-50 ft, td 3965 ft.

Pecos County—Taylor-Link: Milton Unger et al's University-Shell 3-A, sw ne nw sec 33, blk 16, elev 2537 ft, flow 263 bbls, 2-in, acid 1000 gals 1404-41 ft.

Schleicher County—Page: Cooper Gas Co.'s Page 1-D-39, 1468 ft from n and 1170 ft from e lines GH&SA 39, blk L, elev 2376 ft, base Cisco 2225 ft, top Palo Pinto 4810 ft, Strawn 5280 ft, Ellenburger 6487 ft, 30,000,000 gas and 30 bbls distillate, open, acid 9800 gals 5305-5630 ft, td 7022 ft.

Terry County—Slaughter: DeKalb Agricultural Assn's Jacobson 1-A, 2086 ft out swc sec 6, blk D-11, J. H. Gibson sur, pump 34 bbls, plus 41 percent bs&w, acid 6000 gals 5048-62 ft, td 5084 ft.

Yoakum County—Wasson: American Liberty-Atlantic's Johnson-Texaco 10, c ne nw sec 772, flow 128 bbls, plus 3 percent bs&w, 2-in, acid 10,000 gals 4965-5261 ft.

WEST TEXAS WILDCAT COMPLETIONS

Sutton County—Failure: Kingdom Oil Co.'s Allison 1, 2458 ft from n and 1427 ft from e lines TW&NG 91, blk 9, elev 2375 ft, abnd 4676 ft.

WEST TEXAS WILDCAT STARTS

Mitchell County: W. D. Casebolt et al's C. J. Thompson 1, c ne ne T&P 53, blk 25, sp & sd.

Reeves County: Chris Antone et al's Wilson Bros-Biggs 1, 560 ft out nec sec 66, blk 112, W. H. Holder sur, lcn.

TEXAS PANHANDLE FIELD COMPLETIONS

Carson County: Cities Service's Burnett 49-A, I&GN 27, blk 5, 33,200,000 gas, 352 lbs rp, natural, lime 2438-2590 ft.

Cities Service's Field 7, I&GN 13, blk 7, jkd 3044 ft.

Gray County: W. D. Kelly et al's Hood 3, I&GN 33, blk 3, pump 151 bbls, shot 750 qts, 2975-3085 ft.

Magnolia's Fee (Tr. 227) 54, I&GN 14, blk 3, pump 30 bbls, shot 560 qts, 2770-2963 ft.

Hutchinson County: Continental's Sanford 7-C, H&TC 79, blk 47, pump 63 bbls, 2681-2728 ft, td 2733 ft.

Moore County: Texoma Natural Gas Co.'s Coon-Sneed 11-M, T&NO 12, blk 6-T, 9,500,000 gas, 390 lbs rp, lime 2610-2780 ft, td 2972 ft.

Texoma s R. S. Coon 23-M, H&TC 147, blk 44, 7,600,000 gas, 387 lbs rp, lime 2724-3060 ft.

Texoma s W. R. Foster 2-FO, T&NO 240, blk 3-T, 25,300,000 gas, 345 lbs rp, lime 2928-3051 ft, td 3294 ft.

TEXAS PANHANDLE WILDCAT START

Hemphill County: G. C. Jenson et al's H. E. Hoover 1, ne se se H&TC 52, blk 41, lcn 6500-ft test.

North Texas

Discoveries Pending in Archer, Montague, Young

Jack County wildcat yields gas on preliminary test. Discoveries pending in Young, Montague and Archer counties. Sanders pool lists first Bend failure.

Jack County: Joe A. Worsham et al's Hensley 1-a, twin location to 5300-ft junked wildcat, tested 1,000,000 ft wet gas daily when unloaded through tubing. Production is from Marble Falls sand at 5270-5306 ft. This discovery will be deepned to try for oil. The original test was junked in this same horizon when flow of oil and gas lodged tools upon entering the pay. Taubert-McKee and Sinclair Prairie's Boyd 1, worked-over discovery, pumped 40 bbls of oil and 260 bbls of water on initial test, then pumped 272 bbls of fluid the second 24 hours. Production is from Ellenburger perforations at 6408-18 ft.

Young County: A. G. Talbot and S. W. Robitaille's Ferguson 1, southeast corner of S. Tynes Survey, has landed pipe to test promising oil saturation in Strawn sand at 3438-49 ft.

Throckmorton County: Humble's Matthews 1, Alvin Tarter Survey, moved in spudder to drill plugs from 5½-in at 4588 ft to test oil saturation at 4597-4613 ft in Mississippi, topped at 4570 ft.

Wise County: Stanolind's Menasco 1, ¾-mile northeast of a 7154-ft junked test, was drilling dry dolomite at 7030 ft, having tested nominal shows of oil and gas at intervals in Bend and Simpson.

Montague County: Sinlair Prairie's Eanes 1, 6¾ miles southwest of Bowie, was drilling at 6915 ft, having yielded 380 ft of mud and 90 ft of oil-cut mud when tester used at 6885-6907 ft in Simpson, topped at 6748 ft. This wildcat will explore Ellenburger before plugging back to test prospective oil production in Bend at 5816-5952 ft. Company's McCarty 1, north outpost for Sanders four-well pool, tested salt water in regular pay 6025-32 ft, and was drilling dry lime at 6550 ft. Continental's Ketchum 1, 2 miles east of Bowie, was drilling dry dolomite at 7350 ft. Nominal shows passed up in the 6100-ft Bend are slated to be given additional tests.

Archer County: Perry Browning's Fee 1, 1⅛ miles northwest of Vogtsberger pool, flowed 75 bbls of oil on 5-hour test through tubing chokes after building up pressure. Production is from Ellenburger at 5216-5330 ft, and well was treated with 10,000 gallons acid.

NORTH TEXAS FIELD COMPLETIONS

Archer County: R. E. Hansen et al's McAnnally 1, sec blk 13, G. P. Meade subdv, abnd 1456 ft.

Morgan & Turner's Andrews 12-A, TE&L sec 2437, pump 2 bbls, 1421-24 ft.

Clay County: Magnolia's Duncan 1, 330 ft fr nw and e lines 300-ac tr, blk 55, Bacon subdv, pump 51 bbls oil, 20 wtr, sand 1142-48 ft.

W. H. Spradling et al's Taylor-Elliott 2, blk 56, Bacon subdv, abnd 1161 ft.

Sussex Oil Co.'s Shumake 29, 1121 ft fr e and 1686 ft fr n lines blk 3, Bacon subdv, abnd 1160 ft.

Clay County—Spring: Continental's Spring 4, 2334 ft fr w and 1270 ft fr n lines H&TC 24, blk 4, Strawn 4957 ft, Bend 5561 ft, abnd 5878 ft.

Wichita County: Fortex Oil Corp.'s Cooper 1, 330 ft out nec 52.8-ac lse, H. Hastie sur A-92, abnd 1361 ft.

C. Y. Gorman et al's Greever 1, 330 ft out nec 40-ac lse, A. Brigham sur, abnd 1241 ft.

Wichita County—K-M-A: W. H. Hammon's Fee 15, 467 ft fr swc s 420-ac ET 2, flow 448 bbls, 25/64-in, shot 150 qts 3996-4041 ft, td 4043 ft.

Young County: Shell's Bullock 1-D, Bend 4292 ft, Barnett 4698 ft, Mississippi 4718 ft, flow 624 bbls, plus 19% wtr, natural, 2-in, 4718-99 ft.

Textor Oil Corp.-J. McLester's Moseley 7, 1025 ft se No. 6, Ben Moseley sur No. 113, flow 752 bbls 1-in, natural, Bend 3784-94 ft.

NORTH TEXAS WILDCAT COMPLETIONS

Montague County—Failure: H. F. Gibson et al's Pyeatt-Boland 1, 660 ft from w and 604 ft from s lines J. W. Carter sur A-135, abnd granite 4450-55 ft.

Wichita County—Failure: J. H. Turner et al's Scott 1, 150 ft from s and 370 ft from e lines sw sw Tarrant CSL sur, abnd 1070 ft.

Young County—N. Kisinger Deeper Pay: Hanlon & Buchanan's Street 2, 4113 ft from se and 495 ft from sw lines 280.7-ac lse, John Conner sur A-57, Bend 3578 ft, Marble Falls 3790 ft, flow 494 bbls 45-gr, ½-in, natural, 1553/1 ratio, Marble Falls 4070-80 ft.

NORTH TEXAS WILDCAT START

Archer County: Consolidated Oil Co.'s Wilson 1, 990 ft out sec ATNCL 107, lcn 1500-ft test.

WEST CENTRAL TEXAS FIELD COMPLETIONS

Stephens County: Orion A. Daniel et al's Green 1, 467 ft out nec TE&L 1289, Bend 3308 ft, 1,000,000 gas open, acid 5000 gals, perf 3305-11 ft, td 3342 ft.

E. P. Griffin-Target Dr. Co.'s Green 1, 467 ft out sec TE&L 1284, Bend 3286 ft, 7,000,000 gas and 10 bbls daily, acid 5000 gals 3296-3303 ft.

WEST CENTRAL TEXAS WILDCAT COMPLETION

Coleman County—Failure: Dale Smith et al's Morris 1, 135 ft n and 440 ft e of nec GH&H 26, blk 2, but in David Breeding sur 728, elev 1641 ft, Morris 2250 ft, abnd 2335 ft.

WEST CENTRAL TEXAS WILDCAT START

Brown County: Ungren-Frazier and E. M. Wahlenmaier's J. F. Lane 1, 620 ft fr n and 990 ft fr w lines C. B. Jennings sur 353, sp.

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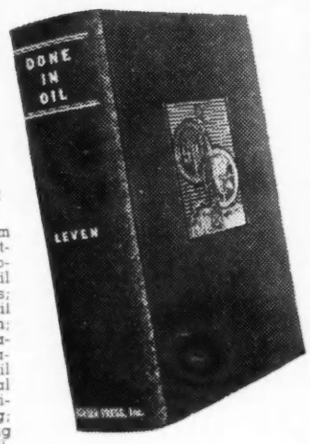

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East Texas

Salt Water Drowns Hopes For Smackover at Talco

Salt water eliminates a decisive Smackover lime test at Talco, shifting interest in deep operations to a Bowie County prospect. Lower Trinity project in Cherokee County is regionally high.

Franklin County: J. B. White and Grady Vaughn's Jackson 1, 2000 ft north of Paluxy production in Talco field, cancelled an outstanding Smackover lime prospect along the fault trend in developing 1080 ft of salt water with light gas blow when tester was used at 8585-8605 ft in Smackover oolitic lime, topped at 8582 ft, elevation 354 ft. It is considered a decisive test for the Talco faulted structure in the Lower Marine, as it crossed the fault to the upthrow side near 7500-ft level, registering displacement of 1477 ft on top of Travis Peak, deepest marker available for correlation in area.

Bowie County: P. D. Bowlen et al's Simms 1, H. G. Williams Survey, was drilling at 5380 ft in second Glen Rose, with top of massive anhydrite at 5225 ft, elevation 350 ft. All Trinity markers correlate within 10 to 54 ft of those logged by Shell's Wall 1, a 622-ft Travis Peak failure situated 5 miles to the east. Thickness of zones almost identical. Simms 1 is contracted to explore Smackover, and won support of number of majors before gas-distillate strike was made from Smackover by Carter Oil Co.'s Orr 1, Miller County, Arkansas, 33 miles east and 5 miles north.

Cherokee County: Magnolia's Braly 1, Mixon prospect, logged first anhydrite stringer at 7080 ft, and was drilling shale at 7220 ft. This scheduled Travis Peak test is 9 miles east of Humble's Curtis 1, recent oil discovery on Larissa dome, and is 1723 ft high on first Glen Rose, topped at 6010 ft, elevation 403 ft. Braly 1 has recorded noticeable thinning of each zone since entering the Lower Cretaceous series, with first Pettit porosity due near 8100-ft level.

Freestone County: Ohio Oil Co.'s Hill 1, 5 miles north of Butler and in low sector of the Woodbine basin, was drilling shale at 9495 ft.

Hunt County: Ira L. McMahan et al's Winniford 1, mile south of Campbell, became seventh wildcat failure for county since the opening of the Wieland-Club Lake pool last June, and quit in Woodbine water sand at 3037-3140 ft. The pool has 6 producers and 5 failures.

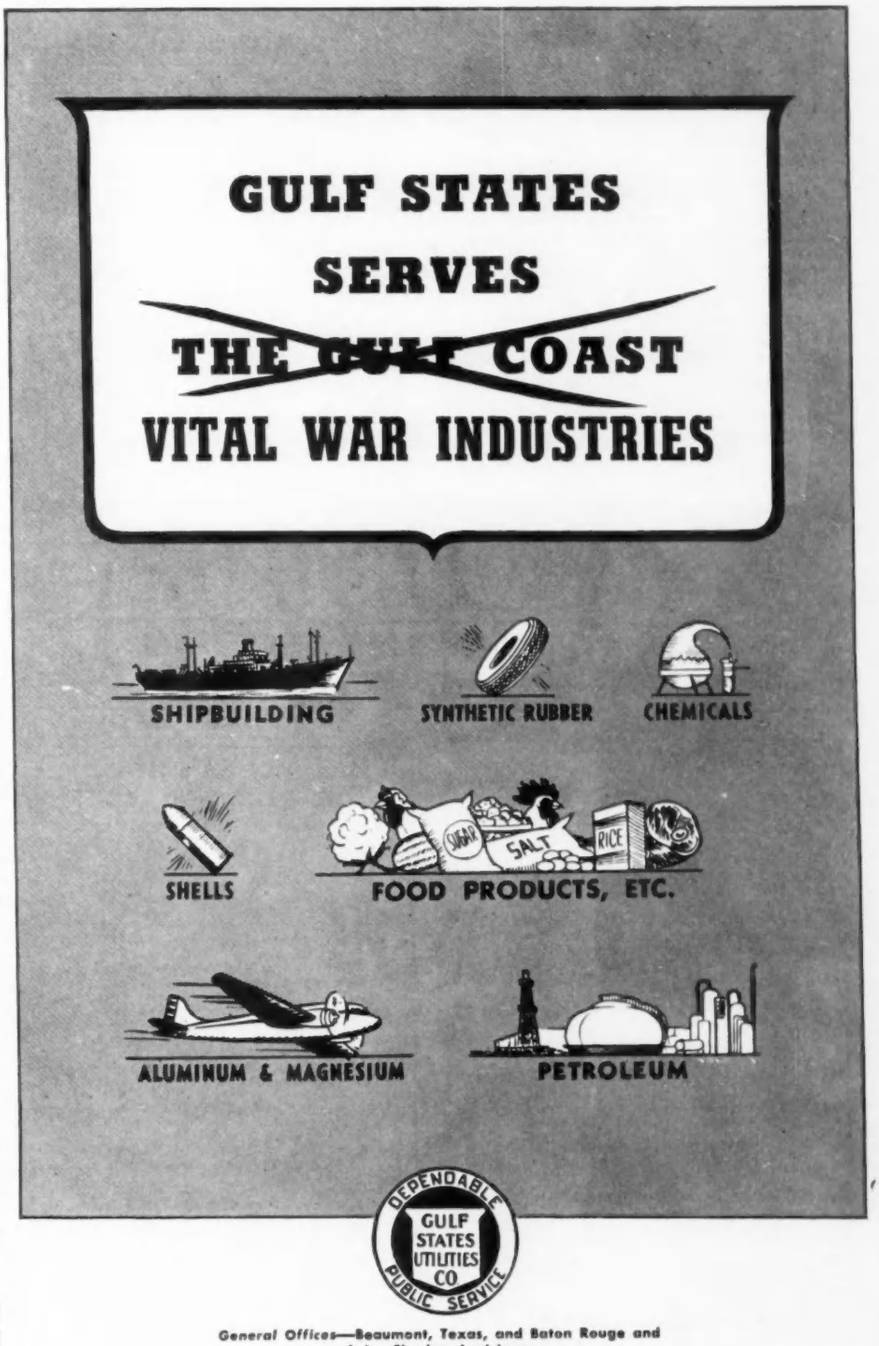
Cass County: British-American Oil Co.'s Lemmons 1, Robertson survey, was abandoned, with only a slight show in the Glen Rose at 6054-70 ft. The wildcat was given up at 6670 ft, checking low.

EAST TEXAS FIELD COMPLETIONS

Henderson County — Opelika: Lone Star Gasoline Co.'s Henderson 1, 500 ft out nwc 70-ac tr, (N) Adrien Anglin sur, elev 477 ft, 79,000,000 gas, open, acid 4000 gals, Rodessa perf 8559-8653 ft, td 8716 ft.

Hunt County—Wieland: L. A. Grelling-D. F. Hugus' Graham 2-A, 330 ft from s and 660 ft from e lines tr, Chas. Hart sur, elev 499 ft, flow 105 bbls, ¼-in, Woodbine perf 2775-81 ft, td 2801 ft.

Smith County—Chapel Hill: C. R. Starnes et al's Spencer 1, 467 ft out nwc 145-ac lse,



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L. H. Dillard sur, flow 168 bbls 42½-gr, 1114/1 gas, 5/16-in, acid 6000 gals, Pettit perf 8254-8344 ft, td 8394 ft.

Wood County—Hawkins: Humble's Williams 6, 467 ft out nec 40-ac unit, B. N. Hampton sur, flow 314 bbls, ¼-in, Woodbine perf 4794-4803 ft, td 4874 ft.

EAST TEXAS WILDCAT COMPLETIONS

Hunt County—Failure: McMahan Bros. and F. W. Stelzer s Winifred 1, 660 ft out nec 45-ac tr, Jas. McKinney sur, elev 554 ft, Pecan 1035 ft, Gober 1660 ft, base Austin 2520 ft, Woodbine 3030 ft, water 3037 ft, abnd 3140 ft.

Navarro County—Failure: Gamble & Lancaster's Price 1, 1540 ft from ne and 1100 ft from nw lines of 240-ac lse, F. Phifer sur, Pecan between 1450-70 ft, abnd 2034 ft.

EAST TEXAS WILDCAT STARTS

Fannin County: John C. Robbins' Davis 1, 660 ft out sec 106-ac lse, sec 20, S. L. Leonard sur, lcn.

Kaufman County: Martin & Milton's Rutland Savings Bank 1, 11,424 ft from w and 1864 ft from n lines John Baker sur, rur.

Upshur County: Three C's O&G Co.'s Blount 1, 665 ft from n and 698 ft from w lines 48-ac tr, J. Trimble sur, rur.

Southwest Texas

Deep Edwards Lime Field Opened in Atascosa County

First deep production opened in Edwards lime in Atascosa County. Final test scheduled on Yegua sand discovery in Colorado County. Two deep Wilcox tests projected.

Atascosa County: Humble is making production test on Thompson 1, wildcat in Imogene area after recovering 614 ft 39-gravity oil on 40-minute drill-stem test in Edwards lime at 7569-79 ft. This well, located in lots 260-261, blk 19, of Dr. Charles Simmons subdivision, set production casing at 7579 ft, total depth, after topping lime at 7576 ft. Two showings, other than in Edwards lime, were encountered. A core was taken at 7347-50 ft in Austin Chalk, recovering 2 ft of hard saturated chalk. Another core was taken at 7486-91 ft which recovered 2 ft of lime showing for production. Considerable interest has been shown in the well since its discovery opens a new area to further drilling and adds to the importance of the up-dip Wilcox trend. The well opens the first deep field in the county.

Colorado County: Final test is reported being made on Shell's Schiurring 1, Yegua-sand discovery 4 miles west of Garwood, which recently opened a field although it flowed considerable water along with the oil. Perforations were made at 6143-45 ft, and on latest gauge flowed 170 bbls of fluid daily through ¼-in choke, with a big portion of flow being water. Hole was drilled to 6997 ft and set casing to 6198 ft. A hearing has been set October 2 at Austin for field designation and allowable.

Wildcats: Two deep Wilcox wildcat tests have been projected along the trend. Shell will drill Neuhaus 1, wildcat between deep producers at Vienna and Provident City fields in Lavaca County. Shell will carry the test to 11,500 ft, which will be considerable distance inside Wilcox.

Cities Service has staked Stephens Company 1, 10,500-ft wildcat on Ramsey prospect, Colorado County. The company worked this prospect with reflection seismograph and later assembled a block of approximately 4500 acres. It will be first deep test for area. Well is located on 453-acre tract in P. K. Bartelson survey, A-84.

LOWER TEXAS GULF COAST FIELD COMPLETIONS

Jackson County—Stewart: W. Stewar Boyle's Cospey 1, 660 ft fr s&wl's 676-ac lse, George Sutherland sur, 5½-in 5038 ft, perf 4986-94 ft, flow 128 bbls ⅛-in, td 5044 ft.

W. Stewart Boyle's Meyer 1, 660 ft fr n&el's of e 80-ac tr of 160-ac tr, George Sutherland sur, 7-in 5048 ft, perf 5060-72 ft, 49 bbls, 5/32-in, td 5155 ft, opens new sand.

Jackson County—West Mauritz: John B. Coffee's Mauritz, 660 ft fr n&wl s of 40-ac unit, Morris & Cummings sur 21, 5½-in 5603 ft, perf 5479-82 ft, 107 bbls, 7/64-in, td 5603 ft.

Jackson County—Harmon: Gulfboard's Mauritz 1, 513 ft fr e&wl's & 467 ft fr nl of 57-ac tr, M. L. York sur 12, 5½-in 5500 ft, perf 5344-58 ft, 130 bbls, 5/32-in, td 5500 ft.

Gulfboard's McCrory 2, 693 ft fr n&sl's & 880 ft fr el of s 92-ac of 232-ac tr in M. L. York sur 12, perf 5322-32 ft, 133 bbls, 3/16-in, td 5440 ft.

Jackson County—Maurbro: Humble's Strauss 9, 467 ft fr el & 4288 ft fr nl of 530-ac tr in Abraham M. Clare sur, 5½-in 5198 ft, sand 5208 ft, flow 314 bbls, ¼-in, td 5219 ft.

Jackson County—West Ranch: Magnolia s West Ranch 259, 6600 ft fr swl 11, 582-ac lse in Ramon Musquez gr, 5½-in 5765 ft, perf 5756-61 ft, 93 bbls, ¼-in, td 5765 ft.

Jackson County — Mayo: Pan American's Ryza 1, 467 ft fr el & 536 ft fr sl of Morris & Cummings sur 11, 7-in 5422 ft, perf 5409-17 ft, 105 bbls, ⅛-in, td 5422 ft.

Jackson County—Harmon: Sun's Harmon 2, 1980 ft fr e'ly wl & 987 ft fr nl of A. Kountze sur 23, 445-ac tr, 5½-in 5432 ft, perf 5380-88 ft, reperf 5413-19 ft, abnd 5438 ft.

Jim Wells County—Seeligson: Magnolia's Seeligson 31, 661 ft fr s&el s of A. Ramirez gr, 5½-in 6050 ft, perf 5988-90 ft, 168 bbls, 7/64-in, td 6050 ft.

Kleberg County—Seeligson: Humble's King Ranch-Cabeza 4, 3798 ft fr sl & 660 ft fr wl of A. G. King sur 50, 5½-in 5958 ft, flow 161 bbls ¼-in, td 6973 ft.

LOWER TEXAS COAST WILDCAT COMPLETIONS

Dewitt County—Discovery: Tide Water's Gips 1, Nordheim area, 760 ft fr nel & 2427 ft fr sel of 521-ac lse, Willis A. Moore sur, 5½-in 8400 ft, perf 7027-30 ft, flow 80 bbls, 7/64-in, 36.2-gr, td 8500 ft.

Hidalgo County—Failure: Balridge King's Daskam 1, 184-ac lse, blk 28, porc 45, Reynosa Juris gr, abnd 6012 ft.

Jackson County—Failure: J. L. Collins' Planet Oil, ne Francitas field, 400-ac lse, P. Green sur, abnd 10,008 ft.

Jackson County—Failure: R. N. Ranger's Glass 1, 133-ac lse, J. J. Linn sur, abnd 5502 ft.

Jim Wells County—Failure: Guy I. Warren s Knolle 1, 160-ac lse, Casa Blanca gr, abnd 5877 ft.

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ONE complete unit for oil well servicing with tools for 2″ and 2½″ tubing and rod work. This unit capable of handling 4500′ of tubing and rods.

THREE 500 barrel steel storage tanks.

TWO 1000 barrel steel storage tanks.

ONE O.C.S. cable tool unit with drill in tools, steel bull wheel, 12x12 Ajax steam engine and 60 horsepower boiler.

For prices and complete details, write or call,

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WANTED TO BUY

■ WANTED: 6—10,000 to 55,000 BBL Tanks 12—500 to 1200 ft. air Compressors. 20—High pres. Cylinders 20 to 50 ft. long. RUSSELL STANHOPE, 60 E. 42nd St., New York.

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■ Priority forms, drilling, gauge, production inventory, payroll, pipe tally, material transfer and more than fifty other field and office printed forms, regularly used by oil companies, immediately available to meet your requirements. Complete catalog on request. Address Oil Form Dept., Gulf Publishing Company, Houston, Texas.

Did you know that more men exclusively engaged in the oil and gas drilling, and producing industry subscribe to **The Oil Weekly** than to any other paper? If you want to buy, sell or exchange surplus used equipment, a low-cost advertisement in this column will get action for you in a hurry.

OIL PROPERTIES FOR SALE

NOTICE OF SALE OF OIL WELLS AND LEASES

The Ordovician Oil Company, of San Angelo, Texas, offers the following properties for sale to the highest cash bidder:

7 Producing Oil Wells and a half interest in two other producing wells located in what is known as the Sharon Ridge Field, in Scurry County, Texas, and the oil and gas leases on which they are located, aggregating around 280 acres;

1 Well contracted to be drilled on 40 acres proven acreage, and another well to be tested following a shot, which shows evidence of production;

1—61 Wichita Spudder, good condition, together with power, lights, equipment and tools.

3 New 250-barrel welded storage tanks.

The above wells are now producing under proration and shut-down days around 2000 barrels per month, which sells for around 92 cents to 94 cents per barrel.

Detailed particulars relating to all these items will be furnished on request, including valuation reports of responsible and reliable petroleum engineers.

If interested write the Ordovician Oil Company. Bids will be received at its office, Box 49, San Angelo, Texas, up to the 15th day of October, 1942.

Signed: H. P. ALLISON,
Secretary and Treasurer.

ADVERTISING RATES

for the

TRADING POST SECTION

Regular classified advertisements for this special section, set in type this size without border, take flat rate of 7 cents per word for the first insertion and 5 cents per word for each subsequent insertion of same copy. Display advertisements for this section, set in suitably larger type with ruled border, are $5.00 per inch for first insertion and $4.00 per inch for subsequent insertions. Remittance must accompany copy which should be sent to:

Trading Post Section, THE OIL WEEKLY
P. O. Box 2608 Houston, Texas

SOUTHWEST TEXAS FIELD COMPLETIONS

Duval County—Conoco-Driscoll: Continental's Driscoll 8, 1850 ft fr nl & 1450 ft fr el U. Lott sur 414, 6-in 2998 ft, perf 2982-94 ft, flow 24 bbls ¼-in, 2998 ft.

Duval County—Seven Sisters: George W. Lyles' Chernosky 3, 450 ft fr nl & 2510 ft fr wl of s 126-ac GB&CNG 226, 5½-in 2253 ft, pump 45 bbls, td 2257 ft.

Live Oak County—South White Creek: Joe Stelzig's Hoelscher 1, 330 ft fr n, s & el 40-ac tr, blk 72, BS&F 15, abnd 3500 ft.

Refugio County—South McFaddin: P. R. Rutherford's Fagan 2, 933 ft fr nl & 467 ft fr wl of 865-ac tr out of 1685-ac tr in Nicholas Fagan sur, 5½-in 5715 ft, perf 5646-50 ft, jetted 20 bbls day, td 5760 ft.

San Patricio County—Oden: Seaboard Oil Co.'s Asebedo 1, 500 ft fr s&el's 160-ac lse, ne¼ sec 7, Juan de la Garza gr, 5½-in 5520 ft, perf 5438-43 ft, 133 bbls, ⅛-in, td 5565 ft.

Seaboard's Burrows 4, 500 ft fr nl & 990 ft fr wl 160-ac lse, ne¼ sec 6, Juan de la Garza gr, 5½-in 5553 ft, perf 5437-42 ft, 146 bbls, ⅛-in, td 5553 ft.

Starr County—Rincon: Continental's Slick 3, 1640 ft fr el & 330 ft fr sl sur 219, 6-in 4050 ft, perf 3958-80 ft, 192 bbls, 3/16-in, td 4161 ft.

Continental's Slick 60, 330 ft fr n&el's of w½ of sur 486 on 314-ac tr, 6-in 3997 ft, perf 3957-72 ft, flow 226 bbls, 3/16-in, td 3997 ft.

Continental's Wehrle 6, 1600 ft fr el & 2325 ft fr nl of sur 220, 426-ac tr, abnd 4685 ft.

Starr County—Ulrich: Fidelity Oil & Royalty's Sugarland 1-D, 660 ft fr nl & 760 ft fr e&wl's 100-ac lse, porc 91-92, abnd 4401 ft.

Webb County—Mirando City: James F. Ross' Jones-Garcia 2, 160-ac lse, sur 54, abnd 3500 ft.

SOUTHWEST TEXAS WILDCAT COMPLETIONS

Duval County—Failure: Texon Royalty's Holzaphel 1, 386-ac lse, sur 178, abnd 1207 ft.

Live Oak County—Failure: Moore Development Co.'s Doebler 1, 200-ac lse, sec 76, Simmons City, area, abnd 2570 ft.

Starr County—Failures: D. C. DeWitt's Flores 1, 100-ac lse, porc 110, abnd 1700 ft.

D. C. DeWitt's Guerra 1, 40-ac tr, blk 22, porc 110, abnd 985 ft.

Sun's Solis 1, share 42, porc 94, 115-ac lse, Garcia, area, abnd 2922 ft.

SOUTHWEST TEXAS WILDCAT START

Starr County: T. E. Stephens' Guerra 1, 40-ac tr of share 253 of porc 69, lcn 5000-ft test.

SOUTH CENTRAL TEXAS WILDCAT COMPLETION

Wilson County—Failure: L. D. Armsby's Ridout 1, 200-ac tr, John W. Brown sur, ne Floresville, abnd 5216 ft.

SOUTH CENTRAL TEXAS WILDCAT START

Bastrop County: Taylor Refining Co.'s Watterson 1, 660 ft fr n&el 220-ac tr, Andrew May sur, 5 mi ne Red Rock, lcn 3700-ft test.

Texas Gulf Coast

Superior Completes Major Extension to Lake Creek

Superior completes deep extension to Lake Creek field, Montgomery County. Deep wildcat to be drilled in Blessing area, Matagorda County.

Montgomery County: A major extension and a new sand has been completed in Lake Creek area with Superior's Frost 1, 2½ miles northeast of the field proper, flowing at rate of 167 bbls of 47-gravity oil daily based on 12 hr gauge. Test was made through 22/64-in choke, with 1700 pounds pressure on tubing. This well, which many believe to be in a new field, was perforated at 11,508-533 ft in Wilcox. It blew out and toppled derrick over when a drill-stem test was made in this sand.

Wilcox Trend: George W. Strake is drilling below 9650 ft in Wilcox in Jones 1, wildcat in Willis area, Montgomery County; no information except a few small showings were reported to have been found.

Strake reamed down to 6967 ft and has resumed drilling in Peel 1, also in Montgomery County. Cockfield was topped at 3750 ft and Wilcox at 6885 ft. Cores taken at 6906-36 ft carried oil and gas odor.

San Jacinto County: Shell has completed Goldston 2 to extend production westerly in Mercy field. The well was perforated at 8254-70 ft in Wilcox, and flowed at rate of 168 bbls daily through ⅛-in choke with 1450 pounds pressure on tubing and 1550 pounds on casing. Gas-oil ratio was 1160/1.

Matagorda County: Cities Service is preparing to drill Pierce 1, deep wildcat in Blessing area. Location is in J. W. E. Wallace survey and is west of a 7720-ft dry hole drilled by Teets and Harris several years ago. The company has worked the prospect thoroughly with reflection seismograph. The well will be north of the Blessing gas field proper.

Polk County: Gem Oil Co. has opened Sparta sand production in Livingston field. Its Cavanaugh & Collins 4 failed to produce in deeper Wilcox, and was completed for 207 bbls of 36.9-gravity oil through ¼-in choke with 900 pounds pressure on casing, tubing 200 pounds. Total depth is 7993 ft. Sparta sand was topped at 6294 ft.

TEXAS GULF COAST FIELD COMPLETIONS

Chambers County—Seabreeze: Sun's Grant-Hoffman 1, 40-ac unit TNO 131, 5½-in 8665 ft, perf 8510-45 ft, flow 175 bbls, ⅛-in, td 8665 ft.

Harris County—Dyersdale: Frank J. Gravis' Burkitt 34, 503 ft fr s, 1007 fr wl Burkitt lse, James Bundick sur, 5½-in 4081 ft, flow 103 bbls, 4081 ft.

Jefferson County—Stowell: Glenn McCarthy and Brown & Wheeler's McFaddin 2, 102-ac tr, B. A. Vacocu lge, A-53, 5½-in 9016 ft, perf 8884-87 ft, 189 bbls, ⅛-in, td 9308 ft.

San Jacinto County — Mercy: Atlantic's Beshell 1, 86-ac tr, William Dobie sur, perf 8282-88 ft, abnd 8317 ft.

Shell's Foster 1, 5672-ac tr, William Dobie sur, 5½-in 8293 ft, perf 8277-88 ft, flow 149 bbls, ⅛-in, td 8310 ft.

Waller County—Katy: Fohs and Houston Oil Co.'s Cope 1, 1320 ft fr n&wl of 880-ac tr, Thomas Cresop sur, 5½-in 7348 ft, perf 7178-92 ft, 7212-30 ft, 7294-7304 ft, gas-distillate, no gauge, td 7502 ft.

TEXAS GULF COAST WILDCAT STARTS

Madison County: Pan American's Chambless 1, 461-ac tr, William F. Young sur, lcn 6500-ft test.

Trinity County: Magnolia's Cameron 1, Glendale area, J. A. Sepulveda sur, lcn 7500-ft Wilcox test.

South Louisiana

Bayou Couba Discovery Well Runs Final Test

Bayou Couba discovery completed as good producer. New shallow sand in Lockport field produces gas.

St. Charles Parish: The eighth field in coastal Louisiana for the year has been opened with Gulf making completion test on Delta Securities 1, wildcat in Bayou Couba area. Perforations were made in sand at 6536-42 ft, and the well flowed 186 barrels through 9/64-in choke in 24 hours. Tubing pressure was 900 pounds, casing sealed. Gas-oil ratio was 450/1. Perforations were made above and below the sand to shut off water. Total depth is 6917 ft, salt was topped at 6892 ft, and casing was cemented at 6912 ft in Miocene. Sands showing oil were found from 2200 ft to 6800 ft, however only one horizon was tested. Gulf has not started on any new wells in the field which will be known as Bayou Couba.

Calcasieu Parish: Magnolia has opened a new shallow gas sand in Lockport field with Farquhar Unit 1 flowing 1,750,000 cf gas daily through ⅜-in chk from perforations at 3193-95 ft. Operators found sand at 3174-3206 ft and set production pipe to 3520 ft.

Vermilion Parish: Pure is making production test in Alliance 12, outpost in Gueydan field that was sidetracked and drilled to 9227 ft after missing pay sand in first hole. Mulvey sand was topped at

You may have surplus equipment that is urgently needed by some other operator. See the

TRADING POST SECTION

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TEX-LA FIELD WELDING SERVICE

The TEX-LA fleet of field welding trucks, manned by thoroughly experienced welders, is at the disposal of Gulf Coast operators . . . day and night.

TEXAS AND LOUISIANA TOOL CO.

Plants at Liberty and Beaumont, Texas—LUKE PIVOTO, President

9478 ft in first hole. The production pipe was cemented on bottom.

Iberville Parish: Amerada has cleaned up wreckage around Angellos 1, wildcat on Rosedale prospect that blew out, caught fire, and later bridged itself. Total depth is 11,426 ft, and operators are attempting to fish out the stuck drill pipe. Salt was topped in this well at 11,421 ft.

Terrebonne Parish: Texas Co. is preparing to drill a 12,000 ft wildcat in Lake Pelto field. It is State 39, located 900 ft west of State 38, which was a new deep sand discovery on southeast flank.

SOUTH LOUISIANA FIELD COMPLETIONS

Beauregard Parish—Neale: Atlantic's Rice 2-E, ne c nw 34-3s-11w, 5½-in 11,602 ft, perf 10,994-11,027 ft, 226 bbls, 10/64-in, td 11,603 ft.

Calcasieu Parish—Vinton: Union Sulphur's Gray 5, 2408 ft s and 2490 ft e of nw c 4-11s-12w, abnd 5300 ft.

Evangeline Parish — Pine Prairie: Gulf's Schlicher-Thomas 3-A, 1037 ft w alg ni sec 2 fr ne cor and 322 ft s at ra in 2-4s-1w, 5½-in 7815 ft, perf 7789-7810 ft, 288 bbls, 5/32-in, td 7815 ft.

St. Landry Parish—Port Barre: William Helis & Danciger's Futral 3, 6622 ft n 7 deg 30 mins w, th s 82 deg 1124 ft fr sw c 20-6s-5e, 7-in 6614 ft, flow 126 bbls, 7/64-in, td 6614 ft.

St. Mary Parish—Cote Blanche Bay: Texas Co.'s State-Cote Blanche Bay 3, 6510 ft due e USCGS station "Bluff" in West Cote Blanche Bay T-15s-8e, abnd 9297 ft.

St. Mary Parish—Bayou Sale: Humble's Miami Corp. 1-E, 660 ft n&e of sw c 43-16s-9e, perf 10,345-52 ft, flow 178 bbls, ⅛-in, td 11,102 ft.

St. Mary Parish—Horseshoe Bayou: Texas Co.'s St. Mary Parish Land Co. 7, 6177 ft n and 6153 ft w of ne c 23 in 10-17s-9e, 5½-in 10,325 ft, perf 10,205-10 ft, flowed gas, no gauge, td 10,950 ft.

Vermilion Parish—Gueydan: Fohs' Mulvey Irrigation 6, 2043 ft w and 300 ft n se c 34-11s-1w, perf 9540-57 ft, flow 182 bbls, ⅛-in, td 9779 ft.

Vermilion Parish—West Gueydan: Magnolia's Ferguson 5, 660 ft s, 2035 w ne c 5-12s-2w, 5½-in 10,843 ft, perf 10,792-10,802 ft, flow 217 bbls, 7/64-in, td 10,844 ft.

West Baton Rouge Parish — West Port Allen: Amerada's Southern Land 1-A, 660 ft s&w ne c 36-7s-11e, 5½-in 9610 ft, perf 9146-51 ft, flow 71 bbls 21 hrs, ¼-in, td 9848 ft.

SOUTH LOUISIANA WILDCAT STARTS

Orleans Parish: W. T. Burton's State-Lake Catherine 9-318, 3850 ft n 60 deg 45 min w State C&GD Monument E 3158, lcn 10,000-ft test.

St. Landry Parish: Sun's Burleigh 1, Shuteston area, 1680 ft n 81 deg 41 mins w and 320 ft s 8 deg 19 mins w of ne c 37-7s-4e, lcn 10,000-ft test.

North Louisiana

Sparta Strike Looms In Catahoula Parish

Sparta strike looms for Catahoula Parish. Deep levels fail to pay off in well in Caddo-Pine Island field. Four wildcats staked.

Catahoula Parish: Eugene Jordan's Louisiana Central Oil & Gas Co. 1, NE SE 22-9n-5e, swabbed 12½ bbls of 20-gravity oil in 10 hrs from perforations at 1810-17 ft. Pump will be installed. Although the oil is low-gravity and production small, the find will further spur exploration in this parish, lying between the flush Wilcox pools of LaSalle and Concordia. The well was drilled to 4554 ft, depth of the Wilcox pool at Lake St. John in Concordia, but the Wilcox had no shows.

Concordia Parish: The directional test carried under Lake St. John by Carter-California on a state lease was chalked up as the first dry hole for the new Wilcox field. It was abandoned at 6553 ft, after tests of the Wilcox showed salt water.

Caddo Parish: Carter Oil Co.-Glen Rose Gasoline Co.'s Stiles 1, C NW NW 22-21n-16w, tested dry in the Pettit lime and another higher level. Casing was perforated in Pettit at 5000-30 ft, acidized with 4000 gallons and swabbed dry; casing then was perforated at 4346-66 ft, and made a drill-stem test. Open 25 minutes, recovery was five stands of muddy, gassy water. There was a slight show of oil in the Pettit.

NORTH LOUISIANA FIELD COMPLETIONS

Claiborne Parish — Haynesville: Magnolia's Lowe Unit B-1, c sw sw 9-23n-8w, flow 672 bbls, 7/16-in, cp 100, tp 200, perf Pettit lime 5333-44 ft, acidized 5000 gals, td 5367 ft.

Mid-States Oil Corp.'s Taylor Lowe Unit 1, ne c nw 10-23n-8w, flow 298 bbls, ¼-in, cp 700, tp 250, perf Pettit lime 5317-31 ft, td 5390 ft.

Concordia Parish—Lake St. John: California Co.-Carter Oil Co.'s State Lease 476 No. 1, beg now cor sec 15-9n-10e, thence s 31 deg 43 mins w 511 ft to surface lcn in 15-9n-10e, abnd 6553 ft.

Union Parish—Monroe: N. W. Corp.'s Union A-1, c w½ 6-21n-4e, flow 10,603,000 gas, 2215 ft.

N. W. Corp.'s Union A-2, c e½ se 36-22n-3e, flow 10,509,000 gas, 2215 ft.

LaSalle Parish—Hemphill: Placid Oil Co.'s Moffett 1, 800 ft s and 560 ft e nw c ne¼ 27-7s-3e, abnd 4146 ft.

NORTH LOUISIANA WILDCAT STARTS

Claiborne Parish: Gulf's Miller 1, 1660 ft s, 66 ft w ne c 14-20n-8w, southwest of Homer field, to test Pettit lime, lcn.

F. R. Sylvestre's McElwee 1, c se se 11-22n-7w, southeast of Haynesville field, to test Pettit lime, lcn.

Catahoula Parish: Continental's Jones 1, c se se 35-10n-8e, lcn.

Grant Parish: Placid's Tremont B-1, c ne sw 10-9n-1e, lcn.

Caldwell Parish: J. W. Love's Louisiana Central 1, ne se 29-13n-4e, rig up to test Wilcox, 4500 ft.

W. B. White's McDaniel 1, sw se 10-11n-3e, dr.

ARKANSAS FIELD COMPLETION

Lafayette County—Midway: Barnsdall's McClaine A-4, nw ne 13-15s-24w, flow 150 bbls, ¼-in, 6475 ft.

ARKANSAS WILDCAT COMPLETION

Union County: Amerada's Turbeville 1, c se sw 4-18s-12w, abnd 6290 ft.

ARKANSAS WILDCAT STARTS

Clay County: C. C. Alfred's J. L. Crockell 1, c sw nw 23-19s-7w, lcn.

Ouachita County: J. G. Magale's Daniel 1, c ne sw 17-13s-16w, lcn.

Mississippi

Project 9000-Foot Test in Madison County

Flora prospect in Madison County gets 9000-ft test. Carter Oil Co. enters Pickens-Sharpsburg area. Cary well flowing heavy percentage water.

Madison County: Love Petroleum Co. of Jackson, will drill to 9000 ft on Flora prospect on farm-out agreement with Union Producing Co. Location is 750 ft southeast of Union's Anderson A-1, drilled to 6265 ft in 1939 for slight show of oil.

Yazoo County: Carter Oil Co. entered Pickens-Sharpsburg area, staking Bridgeforth 1, C SE SE 32-12n-3e, a diagonal northwest offset to Phillips' Maley 1.

Sharkey County: British-American Oil Producing Co. completed F. B. Houston 2, second well for Cary field, flowing 22 bbls of oil and 48 bbls of salt water, and changed location of Houston 3 to C SW SE SE 15-11n-7w.

Clark County: Macro Drilling, Ltd., junked hole on Long-Bell 1 at 3680 ft and skidded over for new start. The wildcat had a showing of oil on drill-stem test.

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MISSISSIPPI FIELD COMPLETION

Sharkey County — Cary: British - American Oil Producing Co.'s F. B. Houston 2, c sw nw nw 23-11n-7w, elev 98 ft df, 4½-in 3225 ft, gas rock 3262 ft, porosity 3263 ft, acidized 500 gals, flow 70 bbls fluid, 48 of which was water, ⅛-in, oil 25 gr, tp 135, cp 290, td 3265 ft.

MISSISSIPPI WILDCAT COMPLETION

Clarke County: Marco Drilling Co.'s Long-Bell 1, sw c se sw 10-2n-16e, elev 388 df, Wilcox 644 ft, Midway 2095 ft, Clayton 2595 ft, Selma 2612 ft, Eutaw 3657 ft, sand 3680 ft, DST 3658-86 ⅜-in chokes, open 50 mins, no pressure, rec 5 ft clean oil, 25 ft oil-cut mud, ran 4½-in casing to bottom, but parted before cemented, tried to drill by, twisted off drill stem, junked, abnd, 3680 ft, skidded rig.

MISSISSIPPI WILDCAT STARTS

Adams County: Pure's McDowell 1, 790 n, 765 w, se cor 1-6n-4w, rig.

Hinds County: Plains Production Co.'s Gaddis 1, c nw ne 7-7n-3w, rig.

Lamar County: W. S. F. Tatum's Tatum Fee 4, 3347 s, 15 e nw cor 13-2n-16w, dk.

Madison County: Love Petroleum Co.'s Anderson 1, c ne nw 12-8n-1w, lcn.

California

Three Wildcat Tests Are Abandoned

Three California wildcat ventures reach abandonment stage, one in Kern and two in Ventura County areas, as operations resumed on a third Ventura County exploratory project.

Kern County: After finding the Vedder zone wet, Bolsa Chica Oil Corp. has abandoned Clark 1, Dyer-Creek, Jasmine area, 36-25-26, at 2931 ft. Vedder was topped at 2916 ft.

Ventura County: Ventura Southern Oil Co. has abandoned McCampbell G-1, sec 19-3-19, Grimes Canyon area, at 5363 ft. Last cores taken were in hard gray barren sand. Top of Pico was reported at about 1100 ft, Miocene at 1600 ft, Modelo at 2600 ft, Valvulineria Californica at 2625 ft, and Sespe at 4155 ft.

Northwest of Ventura Road and Gonzales Road in the Oxnard district, Royalty Service Corp. has abandoned Leonard 1 test well, 29-2-23, at 8417 ft. No gas or oil showings were reported and no tar zone encountered. As far as 8223 ft well was reported in Pliocene and failed to encounter Repetto. Formation was mostly shale and gray sand, with gray sand predominating which for most part showed salt water.

Preparations are being made by Inter-Counties Fuel Co. to resume operations on Goodenough 1 wildcat, 22-4-19, Sespe area, and will seek to develop production above 3000 ft. A deep test is scheduled to be made with the well should operator fail to develop production above 3000 ft with assistance of Standard Oil Company of California.

CALIFORNIA FIELD COMPLETIONS

Fresno County—Riverdale: Amerada's Courtney 4-23, 330 ft n 330 ft e w¼c 23-17-19, flow 619 bbls 37.3-gr, 18/64-in, 970/620 lbs., perfs 6825-6830, 6802-6818 ft, td 6832 ft.

Fresno County—Coalinga Old: Texas Co.'s Pleasant Valley C-2, 1106 ft n, 1813 w sec 6-20-15, pump 120 bbls 16.4-gr, td 2100 ft.

Kern County—Buena Vista: Standard's No. 93-35B, 1461 ft n, 1887 e swc 35-31-23, pump 65 bbls 26.9-gr, 420 ft perf 3395 ft, td 3400 ft.

Kern County — Midway-Sunset: Chanslor Canfield's No. 41-9, 865 ft n, 1050 e swc 9-32-23, pump 27 bbls 15.6-gr, 153 ft perf 1513 ft, td 1595 ft.

Orange County—Huntington Beach: Signal's Signal-Bolsa No. 25, 3035 ft n, 677 w swc plot C, Standard Bolsa lease, flow 300 bbls 25.9-gr, 205 ft perf 3857 ft, td 3948 ft.

Ventura County—San Miguelito-Padra Canyon: Continental's Grubb 27, 283 ft n, 3586 e c sw¼ 23-3-24, flow 399 bbls 28.5-gr, 200/540 lbs, perfs 6462-6970, 7630-7897 ft, td 7897 ft.

CALIFORNIA WILDCAT COMPLETIONS

Kern County—Failures: Bolsa Chica's Clark 1, 3585 ft n, 552 w sec 36-25-28, abnd 2930 ft.

Richfield's Ninkovitch US 1, 330 ft n, 330 ft e c 3-30-21, abnd 1605 ft.

Westates Petroleum Corp.'s Kimball 4, 330 ft n, 1650 ft e swc 32-29-22, abnd 1769 ft.

CALIFORNIA WILDCAT STARTS

Fresno County: Texas Co.'s Boychester 83-18, Sec. 18-21-15, Coalinga area, lcn.

Shell-Standard Oil Co.'s Hendersen 66-22, 27-15-15, Tranquility area, rig.

Los Angeles County: Caloga Oil Co.'s Caloga 1, Canoga Park area, lcn.

Michigan

Defer Offsets to Well In Missaukee County

Discovery prospect in Missaukee County drops. Mecosta County wildcat brings immediate offset drilling.

Missaukee County: Gordon Oil Co. raised 5-in casing 3 ft and cemented in Blue 1, SE SE 26-22n-6w, Aetna Township, and may drill deeper. Well flowed 186 bbls in 19 hrs natural and then dropped to average of 35 bbls per day. On pump it recovered up to 86 bbls in 24 hrs. Offset work originally planned will be deferred.

Mecosta County: Four active locations reported in Fork Township, following Sun Oil Co.'s Murray 1, 5-16n-7w, discovery, which has maintained 300-barrel choked production since completion from Dundee lime. Gulf, Smith and Sun are drilling offsets.

Arenac County: Don Rayburn's Mee 1, C NW NW 4-19n-3e, Adams Township, 3 miles north field, logged 610,000 gas in Berea sand at 1605 ft, indicating new gas field. Outpost to be deepened to Dundee, about 2900 ft.

Walter L. McClanahan cased 5-in at 3900 ft on Milligan 1, 3-19n-6e, wildcat,

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General Office and Factory, Toledo, Ohio — Sales Office, McBirney Bldg., Tulsa, Okla.

to shut off sour gas-oil pay in Monroe lime. Richfield-Sylvania section at about 4100 ft is objective of test.

Newaygo County: Pure Oil Co. shut down for orders on Kasen 1, 22-16n-11w, Barton Township, after drilling Dundee horizon dry. Formation logged at 3610 ft with water at 3761 ft.

MICHIGAN FIELD COMPLETIONS

Bay County—Kawkawlin: Talbot Oil Co.'s Schwab 1, s½ ne se 28-15n-4e, Dundee lime, pump 91 bbls, 2939 ft.

Clare County—Headquarters: Pure's Trubell 2, n½ ne sw 3-20n-3w, Traverse lime, flow 245 bbls, 3336 ft.

Clare County—Winterfield: Sun's State A4, c ne se 1-19n-6w, Dundee dolomite dry 3830 ft.

Daily Crude Oil Co.'s Schuett 1, w½ sw sw 28-20n-6w, Dundee dolomite, flow 456 bbls, 3779 ft.

Missaukee County—Riverside: Taggart Bros. Co.'s Burgess 93, c nw 29-21n-7w, Stray sand dry 1440 ft.

Ottawa County — Zeeland: J. E. Hood's Dekker 1, se ne se 30-5n-14w, Traverse lime dry 1537 ft.

E. W. Leeder's Nykamp 1, se ne nw 32-5n-14w, Traverse lime dry 1509 ft.

Roscommon County—Richfield: Sun's St. Helen B1, n½ se se 20-24n-1w, Richfield lime, flow 39 bbls, 4343 ft.

MICHIGAN WILDCAT COMPLETIONS

Lake County—Failure: Ohio's Fairbanks 1, s½ sw ne 11-20n-14w, Monroe lime 2616 ft dry 3938 ft.

Muskegon County—Failure: Robt. L. Sander's Rams 1, se sw ne 30-9n-14w, Dundee lime 2200 ft, dry 2601 ft.

Oakland County—Failure: Dhroner et al's Rauffus 1, ne ne sw 2-4n-8e, Traverse 1660 ft, dry 1990 ft.

MICHIGAN WILDCAT STARTS

Isabella County: Union Drilling & Producing Co.'s White-Curtiss 1, ne ne se 5-13n-5w, dr.

Jackson County: Ashby Drilling Co.'s Landon 1, ne sw sw 34-1s-3w, rig.

Kent County: C. W. Teater's Hessler 1, n½ ne ne 14-9n-10w, lcn.

Livingston County: H. C. Nelson's Walker 1, se nw nw 33-3n-5e, rig.

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Eastern States

NEW YORK COMPLETIONS

Allegany County: W. J. Richardson Est.'s No. 3, Gadsby Farm, Bolivar, 8 bbls, Waugh-Porter, 1552 ft.

Pure Penn's Christman farm, Bolivar, 6 bbls, Richburg, 1536 ft.

N.V.V. Franchot's Murphy farm, Bolivar, 8 bbls, Richburg, 1423 ft.

Crowley & Nichols' Wightman farm, Bolivar, 9 bbls, Richburg, 1449 ft.

Ebenezer Oil Co.'s Vincent farm, Scio, 10 bbls, Richburg, 1160 ft.

Bradley Prod. Corp.'s Rolls farm, Alma, 9 bbls, Richburg, 1345 ft.

Bradley Prod. Corp.'s Crandall farm, Alma, 7 bbls, Richburg 1274 ft.

Pat Oil Co.'s Shaughessy farm, Alma, 6 bbls, Fords Brook, 1366 ft.

H. W. Patterson et al's Browning farm, Scio, 6 bbls, Scio, 687 ft.

H. W. Patterson et al's Browning farm, Scio, 6 bbls, Scio, 720 ft.

G. W. Bircil Est.'s Cady farm, Wirt, 5 bbls, Richburg, 1061 ft.

I. & H. Oil Co.'s Clemons farm, Wirt, 6 bbls, Richburg, 1555 ft.

Messer Oil Co.'s Koehler farm, Clarksville, 8 bbls, Richburg, 1460 ft.

Sawnett Oil Co.'s Merritt farm, Genessee, 9 bbls, Richburg, 1466 ft.

A. C. Shaner Oil Co.'s Hammond farm, Clarksville, 7 bbls, Clarksville, 1320 ft.

Wilson Oil Co.'s Wales farm, Genesee, 5 bbls, Richburg, 1345 ft.

NEW YORK INTAKE WELLS

Allegany County: South Bolivar Oil Co.'s McKelvey farm, Bolivar, Richburg, 1365 ft.

W. J. McKee et al's Weir-Macken farm, Bolivar, Richburg, 1525 ft.

Bradley Prod. Corp.'s Russell farm, Alma, Richburg, 1362 ft.

Messer Oil Co.'s "M," E. Allen farm, Alma, Richburg, 1420 ft.

Hanson & Ehret's Gordon farm, Scio, Richburg, 1070 ft.

L. E. Norton et al's Coats farm, Scio, Richburg, 1131 ft.

Bradley Bros. Inc.'s Withey farm, Bolivar, Richburg, 1411 ft.

L. H. Thornton et al's Fassett farm, Willing, Fords Brook, 1266 ft.

Scio Oil & Gas Co.'s Clark farm, Scio, Scio, 863 ft.

Messer Oil Co.'s Koehler farm, Clarksville, Richburg, 1413 ft.

Martin O'Connor Est.'s O'Connor farm, Gennessee, Richburg, 1349 ft.

F. J. Wilson's Burdick farm, Wirt, Wirt, 4136 ft.

Healy Petroleum Co.'s Garthwait farm, Bolivar, Waugh-Porter, 1622 ft.

OHIO COMPLETIONS

Ashland County: Ohio Fuel's Bell 1, abnd 2858 ft.

Athens County: Gibson et al's Copeland 2, 0.2 gas, 774 ft.

C. J. Ross' Colburn 2, abnd 527 ft.

Hocking County: Preston Oil's Sunday Creek Coal Co. 1846, abnd 3468 ft.

Knox County: Upham Gas' Fry 2, 0.18 gas, 2972 ft.

Licking County: Lacknette et al's Titus 1, 0.35 gas, 2699 ft.

Loraine County: E. R. Cain's Zalka 2, abnd 2246 ft.

Medina County: Ohio Fuel's Perkonic 1, 0.5 gas, 3571 ft.

Ohio Fuel's West 1, 0.8 gas, 3273 ft.

Meigs County: Downie et al's Entsminger 2, 0.1 gas, 642 ft.

Monroe County: Spangler & McCourt's Christman 1, 0.03 gas, 1649 ft.

Morgan County: Emmett Able's Hoopes 13, 3 bbls, 410 ft.

Wade Henry's Hoopes 13, 2 bbls, 420 ft.

Muskingum County: Ohio Fuel's Reed 1, 0.11 gas, 4066 ft.

Noble County: R. M. Burns' Gaelagher 1, 0.03 gas, 1552 ft.

J. T. Watson's Groves 1, 0.87 gas, 913 ft.

Perry County: Preston's Sivits 1, abnd 2792 ft.

Preston's Samson 1, 55 bbls & 0.03 gas, 3265 ft.

Pure's Brown 1, 1.0 gas, 3330 ft.

Palm Oil Corp.'s New Perry Coal Co. 5, 25 bbls & 0.25 gas, 3290 ft.

Preston's Ford 1, 18 bbls, 3155 ft.

Summit County: Wiser's Hostetler 1, 0.53 gas, 3514 ft.

Tuscarawas County: Status Dev. Co.'s Mathie 1, 0.05 gas, 4007 ft.

Washington County: Dixon & Fogle's Rinard 1, 10 bbls, 1421 ft.

Best Run O. & G. Co.'s Koon 1, 0.1 gas, 1295 ft.

OLD WELL DRILLED DEEPER

Washington County: Chas. Alloway's Ward 1, 0.2 gas, 40 bbls, 1540 ft.

PENNSYLVANIA COMPLETIONS

Armstrong County: Humphries Stone & McCall's Anderson 1, 0.08 gas, 925 ft.

Butler County: T. W. Phillips Gas & Oil Co.'s Shuster 2, 0.17 gas, 3189 ft.

Clarion County: McNutt Oil & Gas Co.'s Henry 1, 0.05 gas, 1447 ft.

Greene County: Waynesboro Home Gas Co.'s Roberts 1, 0.19 gas, 3202 ft.

Manufacturers Light & Heat Co.'s Orndoff 2, 0.02 gas, 3269 ft.

Washington County: Manufacturers Light & Heat Co.'s Parkinson 1, 0.05 gas, 2966 ft.

WEST VIRGINIA COMPLETIONS

Boone County: Owens-Libby-Owens' Allen & Pryor 36, 0.08 gas, 2505 ft.

Braxton County: Pittsburgh & W. Va. Gas Co.'s Cobb 7874, abnd 2299 ft.

Calhoun County: W. H. Ayers' Summers 1, 4 bbls, 1835 ft.

Hope Natural Gas' Parr-Lewis 8615, 0.62 gas, 1600 ft.

Clay County: Pitts. & W. Va. Gas Co.'s Elk River Coal & Lumber Co. 7863, 0.48 gas, 1715 ft.

Gilmer County: Clem S. Morris' Roberts 3, 0.08 gas, 2088 ft.

Jackson County: Columbian Carbon Co.'s Carney 2, 6.05 gas, 5350 ft.

Columbian Carbon Co.'s Hutchinson 1, abnd, 5385 ft.

United Carbon Co.'s Perkins 1054, 3.83 gas, 5271 ft.

Lewis County: Hope Natural Gas' Woofter 8631, 0.99 gas.

Lincoln County: Cambridge Gas Co.'s Guthrie 1, abnd 3950 ft.

Putnam County: Hogan Gas Co.'s Smith 1, 0.05 gas, 2203 ft.

Ritchie County: Hope Natural Gas Co.'s Prunty 8613, 0.91 gas, 1803 ft.

Upshur County: Standard Gas Co.'s Smallridge 1, 0.8 gas, 2138 ft.

Wayne County: C. J. Hoffman's Bloss Heirs 2, 0.07 gas, 2862 ft.

OLD WELLS DRILLED DEEPER

Lincoln County: Turtle Lick Gas Co.'s Thompson 1, 0.38 gas; from 2465 to 3721 ft.

United Fuel Gas Co.'s Miller 2416, 0.6 gas, 3984 ft.

Monongalia County: Hope Natural Gas Co.'s Shriver 5486, 0.27 gas, 3490 ft.

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Men in the Industry's News

SETH W. HERNDON, president of the Herndon Drilling Company, Tulsa, has been appointed director of natural gas and natural gasoline for District 2, with headquarters at Chicago, it was announced by the OPC September 24. Herndon, who has been engaged in operations as an independent since 1921, will serve on lease of absence from his company, which he formed in 1925 after four years' service as general superintendent of the Bu-Vi-Bar Petroleum Corporation.

HARRY B. CATLOW has been appointed general manager of sales of Republic Supply Company, effective October 1, 1942. For a number of years Catlow has been district sales manager for Truscon Steel Company with headquarters in Houston.

MISS LEOTA MAY PARK, chief clerk in the scouting department of Tide Water Associated Oil Company, Houston, was sworn in September 16 as an apprentice seaman in the Woman's Auxiliary Voluntary Emergency Service, the first woman in Houston to enlist in the WAVES. She has been with Tide Water for 14 years.

R. LESLIE LEE of San Angelo, vice president of Lee Petroleum Corporation, has been elected president, succeeding his late father, C. V. Lee. Mrs. J. W. Jones and Mrs. W. G. Volkman, daughters of the deceased president, were chosen vice president and director, respectively. The company has production in a number of West Texas fields.

JOHN T. HAYWARD, vice president and general manager of Barnsdall Research Corporation, Tulsa, is taking an extended leave of absence to go to Washington as research expert for the Navy. Prior to his going, Hayward spoke to the Tulsa chapter of Nomads on "War Trends from the Oil Viewpoint," at luncheon September 21.

VICTOR McGOWEN, petroleum engineer with Sunray Oil Company, has been transferred from Allen to the Oklahoma City area where he succeeds Jack Abernathy.

DR. A. N. MURRAY, professor of geology, University of Tulsa, spoke to Engineers Club of Tulsa on the discovery of a deposit of lapis lazuli recently investigated in Colorado.

H. F. KING, Continental Oil Company scout, has been transferred from Great Bend, Kansas, to Ardmore, Oklahoma.

FIRST LIEUTENANT ROBERT S. DIETZ of Ellington Field, Texas, addressed the Houston Geological Society September 24 on "A Geological Investigation of the Sea Floor off the Coast of California." Officer candidates for the ensuing year were nominated.

WILLIAM T. HEDLUND of Summit, New Jersey, has been named president of Elastic Stop Nut Corporation, Union, New Jersey. Hedlund has been a director of the corporation. He was formerly vice president of Electrolux Corporation in charge of engineering.

I. D. LAIN of Bloomington, Illinois, president of the Lain Oil & Gas Company, has confirmed purchase by his company of the 152-acre discovery lease, with 2 shallow oil wells and a gasser, in the Soma-Noelke pool, West Texas, from Frank Black and Norman Curtis, who acquired the property last May from Soma Oil & Gas Syndicate.

D. R. MORRIS, an official of the George Callihan Interests, producers and drilling contractors, has moved from Albany to Abilene, Texas, to become office manager.

AL P. LOSKAMP, West Texas division manager for Union Oil Company of California with headquarters at Midland, was called to Los Angeles September 17 by the sudden death of his mother.

EDWARD W. P. SMITH, 56-year-old consulting engineer for The Lincoln Electric Company and a nationally known authority on arc welding, was found dead recently in his berth aboard a train bringing him back to Cleveland from Indianapolis.

DESIGN HANDBOOK for Practical Engineers

By DR. ALOIS CIBULKA

Department of Petroleum Engineering University of Texas Austin, Texas

This book is invaluable as a time saver. It gives information "at a glance" for Petroleum, Mechanical, Civil, Structural, Chemical and Industrial Engineers.

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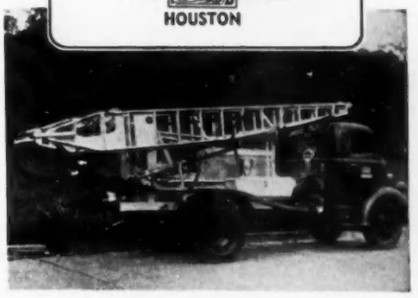

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Squeaks from the Bull Wheel

Generals Are Common

An executive of one of the service companies in Houston wished to talk with the General Crude Oil Company office at Esperson Dome, so he requested his PBX operator to place the call. She, in turn, rang long distance and said:

"We want to talk with General Crude, at Esperson Dome."

The long distance operator replied, patiently: "What are the general's initials, please?"

Be sure to check the . . .

TRADING POST SECTION

on page 64 of this issue

Because of the scarcity of certain types of new equipment and the fact that some concerns may have a surplus of certain items and a serious shortage of others, this **"Used Equipment Form"** has been inaugurated as a service and aid to operators in locating needed used equipment or in disposing of surpluses that may be needed by others.

The Important Question

"You can't get cuffs on pants."

"Can I get pants on the cuff?"

Tough Teddy

The three bears were taking a walk on the desert, so Goldilocks could eat the little bear's porridge.

Papa Bear sat on a cactus and said "Ouch!"

Mama Bear sat on a cactus and said "Ouch!"

The little bear sat on a cactus and didn't say anything—just sat.

Mamma Bear turned to Papa Bear, "Paw," she said. "I hope we're not raising one of those Dead End kids."

Try, Try, Again

"I had to change my seat several times at the movies."

"Gracious, did a man get fresh?"

"Well, finally."

At Death's Door

"Boy that's a swell looking nurse you've got."

"I hadn't even noticed her."

"Heavens, man, I had no idea you were that sick."

U. S. O.

"Hello. Looking for girls?"

"Yes."

"Shall I dig you up a few?"

"No; I want a live one."

Not Restricted

"So your new job makes you independent?"

"Absolutely. I get here any time I want before 8, and leave just when I please after 4."

Store Rules

A cute little lass approached the floorwalker and asked, "Do you have notions on this floor?"

The floorwalker looked her over, and then remarked, "Yes, madam, but we suppress them during working hours."

Ever Thus

"So, you're a young man with both feet on the ground, eh? What do you do for a living?"

"I take orders from a man with both feet on the desk."

Honest

"Are you a good golf player?"

"Yes and no."

"What do you mean?"

"Yes, I am no good."

Eloquent

"Do you think the senator puts enough fire into his speech?"

"My opinion is he did not put enough of his speech into the fire."

Pious

"Daddy, that carpenter who's building the back steps must be an awful good man."

"What makes you think so?"

"He hammered his thumb, and then he talked to God for five minutes."

Profane

"What kind of a guy is your roommate?"

"Well, last night he barked his shin on a chair and he said, 'Oh, the perversity of inanimate objects!' "

No Stretch

"Can't you stretch the music a little—just a dance or two more?"

"Sorry, this isn't a rubber band!"

Too True

"Oh, Mary, how did you break that vase?"

"I'm very sorry, mum; I was accidentally dusting."

Date at Eight

"Isn't it time you were entertaining the prospect of matrimony?"

"Not quite, dad. He won't be here until 8 o'clock."

Emulated

The distinguished Senator Henry L. Dawes, from Massachusetts, was, for a time, chairman of the Committee on Indian Affairs of the United States Senate.

One day a Quapaw Indian called at his office to urge the passage of a bill authorizing the Quapaws to allot their land in severalty. Senator Dawes objected on the grounds that the Quapaws were not sufficiently intelligent.

"Why, Senator," protested the Indian representative, "do you mean to tell me you think I have not sense enough to manage my own business?"

"No, certainly not," replied Dawes; "I was only thinking of the average Quapaw."

"Senator Dawes," said the Red Man, "I am an average Quapaw Indian."

"Oh, no," countered the Senator, "the Quapaws would not send an average man to represent them before the Congress of the United States. They would send the smartest man they had."

"My dear Senator," said the Indian very patiently, "you are very much mistaken. The Quapaws are just like the white men. They *never* send their smartest men to Congress."

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Notes for the Equipment Buyer and User

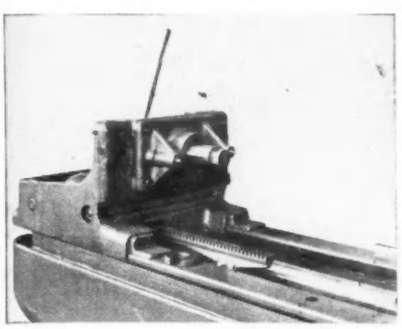
Threading Machine

LANDIS MACHINE COMPANY

The Landis Machine Company, Waynesboro, Pennsylvania, manufacturers of thread cutting machines, die heads, collapsible taps, etc., have recently developed a special work-holding fixture for use with its Land-Maco machine for threading vital components required in the munitions industries. This special work-holding fixture provides a means for accurately and rigidly supporting the work piece during the threading operation.

The fixtures provide a work-aligning arbor on which the work is retained by a collar which fits a square, milled close to the end of the arbor. A lever-operated cam arrangement at the rear end of the arbor provides a means for drawing and locking the work piece onto two driving and locating pins.

The special work-holding fixture, as described is fastened to a face plate which bolts to the machine carriage in place of the conventional carriage front



Landis Threading Machine

or vise. The fixture has both horizontal and vertical adjustment on the carriage to assure accurate and permanent alignment of the work piece with the center of rotation of the threading unit. This fixture was designed with a view of holding to within extremely close tolerances for thread concentricity, and to assure maximum production by eliminating the time otherwise required if the work piece were gripped in the conventional vise.

Standard Steels

The Babcock & Wilcox Tube Company, Beaver Falls, Pennsylvania, has issued bulletin TDC-119, which is a complete combined list of standard steels of the American Iron and Steel Institute and the Society of Automotive Engineers, Inc. It also is known as a new technical data card.

Orifice Computer

SONNEY ORIFICE COMPUTER

The Sonney Orifice Computer, Central Avenue Extension, Oil City, Pennsylvania, has announced a new device to facilitate orifice meter computations. The computer is made of transparent celluloid discs on white opaque back in two designs and sizes and is exceptionally useful for quick determination of:

Axelson Manufacturing Company, Los Angeles, received the Army-Navy "E" at recent presentation ceremonies. G. A. Axelson, chairman of the board, accepted the award for the company at the ceremony attended by high ranking Army and Navy officers. Silver lapel pins bearing the Navy "E" on the front and inscribed on the back with the "Army-Navy Production Award" were received for the workers by Angelo Bullera.

1. Rate of delivery of gas through an orifice meter;
2. Size of orifice to install in a meter;
3. Differential to maintain to deliver a desired rate of gas;
4. Pressure to maintain to deliver a desired rate of gas, and
5. Open flow of a well when using the orifice open flow tester.

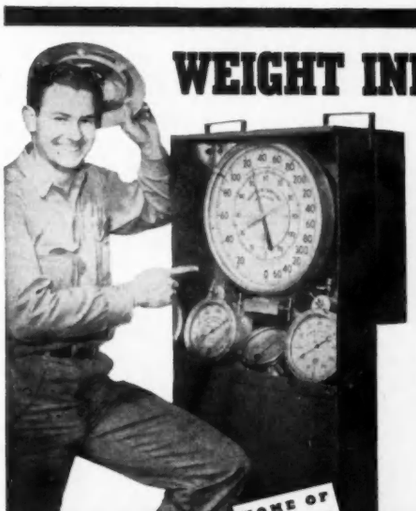
No coefficient for the orifice is necessary in order to use this instrument but if the coefficient or gas characteristics are known, all corrections are provided on the larger size computer to permit accurate computation.

The pocket size instrument is about 3 inches by 5 inches, rectangular shape, and is designed primarily for orifice meter operators and field men. The utility size is circular shape, about 4½-inch diameter, and is suitable for office, shop or field use.

Electronic Voltmeter

GENERAL ELECTRIC COMPANY

General Electric Company, Schenectady, New York, has announced a new electronic crest voltmeter designed to measure ignition voltages of internal combustion engines; surge voltages



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caused by corona and surface discharges in the insulation on such electric equipment as motors, generators, and cables; and other repeated-impulse voltages up to 30,000 volts.

The instrument, weighing only 23 pounds, fills the need for a portable crest voltmeter for both laboratory and production testing. It is suitable for field measurement, such as trouble shooting and the determination of actual operating conditions, and can also be used for testing aircraft engines in flight.

GE Voltmeter

The crest voltmeter can be used in areas where no electric power is available, since it has a self-contained battery power supply. It can be moved readily to any location for testing purposes—a valuable feature when the equipment to be tested is too large to be moved conveniently.

The voltmeter is equipped with an aircraft-instrument movement to provide resistance to vibration. It can be supplied marked and calibrated for any of the following scale ranges: 0-10,000 volts; 0-20,000 volts; 0-30,000 volts.

Water Drive

Cole Laboratories, Inc., Santa Fe Building, Dallas, Texas, has available for free distribution reprints of a paper entitled "Water Influx Into a Reservoir and Its Application to the Equation of Volumetric Balance," written by William Hurst. The paper was presented before the New York meeting of the A. I. M. E. in February, 1942.

A small part of 20,000 blocks manufactured by the McKissick Products Corporation, Tulsa, for defense industrial purposes. Practically all of the facilities of this organization have been engaged in the manufacture of special-purpose blocks for various defense industries.

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•The Garlock Packing Co. —
•Gaso Pump & Burner Manufacturing Co. —
The Gates Rubber Co. —
•Gatke Corp. —
General American Transportation Corp. —
•General Electric Co. —
•The Goodyear Tire & Rubber Co. —
•H. P. Gott Manufacturing Co. —
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•The Guiberson Corp. —
•Gulf Coast Machine & Supply Co. —
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•Halliburton Oil Well Cementing Co. —
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•Haynes Stellite Co. —
•Hazard Wire Rope Division, American Chain & Cable Co. —
Hercules Powder Co. 59
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•Hughes Tool Co. I Cover
Humble Oil & Refining Co. —
•Hunt Tool Co. —

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•Johns-Manville Corp. —
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•Kerotest Manufacturing Co. —
•Keuffel & Esser Co. —
•Kinzbach Tool Co. —
•Kobe, Inc. —

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•Larkin Packer Co. —
Lebanon Steel Foundry —
•Le Roi Co. —
•A. Leschen & Sons Rope Co. —
•Link-Belt Co. —
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•Lucey Boiler & Manufacturing Co. —
•Lucey Export Corp. —
•Lucey Products Corp. —
•The Ludlow Valve Manufacturing Co. —

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Magnet Cove Barium Corp. —
Mark Twain Hotel —
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•Martin-Decker Corp. 71
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•McEvoy Co. —
•McKissick Products Corp. —
•Merco Nordstrom Valve Co. —
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•Mission Manufacturing Co. —
•Morse Chain Co. —
Murphy Diesel Co. —

National Bank of Tulsa —
National Geophysical Co. —
National Hotels —
•National Lead Co. 25
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New Bedford Cordage Co. —
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•The O. C. S. Manufacturing Co. —
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•The Parkersburg Rig & Reel Co. 43
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•Quaker Rubber Corp. —

•Raybestos-Manhattan, Inc. —
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•Rector Well Equipment Co. —
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•Union Carbide and Carbon Corp. —
•Union Wire Rope Corp. —
•Unit Rig & Equipment Co. —
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Valley Steel Products Co. —
Visco Products Co. —

Warner & Swasey Co. —
Warren Automatic Tool Co. —
Waugh Laboratories —
•Waukesha Motor Co. —
•Westinghouse Electric & Mfg. Co. —
•The Wheland Co. —
White-Plaza Hotels —
•The Whitney Chain & Manufacturing Co. —
Whitney National Bank —
•Wickwire Spencer Steel Co. —
•J. H. Williams & Co. —
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•Wisconsin Motor Corp. —
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•Worthington Pump & Machinery Corp. —
Wyatt Metal & Boiler Works —

York Oilfield Supply Co. —
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